

2012

# Man Caves

## 15 Mantastic Spaces

**300+**  
Guy-Approved  
Cave Ideas!

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-  **Basement-Size Stadium** p. 58  
Adapts to Sports Seasons
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Fire, Food, and Fun!
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A Backyard Bastion  
...and more!

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How to Find and Buy Neon and Tin Signs

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## Real man caves for you and your buddies

In this, our first publication of *Man Caves*, we focus not on the over-the-top, budget-busting man palaces most of us can only dream about, but on *real* man caves—the types of retreats you can afford and build, where you and your buddies can kick back, catch a game, tell stories, and enjoy a beverage or two.

Our national Cave Tour includes visits to a basement arcade in Ohio (page 4), a \$500 backyard bar in Georgia (page 34), a baseball-themed basement in St. Louis (page 58), a garage condo in Arizona (page 72), and a Bears retreat in suburban Chicago (page 112).

If you'd like to nominate a man cave or home shop for our next publication, visit [woodmagazine.com/mancaves](http://woodmagazine.com/mancaves) for more details. Please include a short description of what makes your cave a great one and don't forget to attach a few basic photos. We'll be in touch.

*Marlen Kemmet*

Marlen Kemmet  
WOOD® Magazine Managing Editor

## Man Caves

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PHOTOGRAPHERS JASON DONNELLY, SCOTT LITTLE, DEAN SCHOEPPNER, JAY WILDE  
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TECHNICAL CONSULTANTS BOB BAKER, ERV ROBERTS, BOB SAUNDERS  
CONTRIBUTING CRAFTSMEN JOHN OLSON, JIM HEAVEY  
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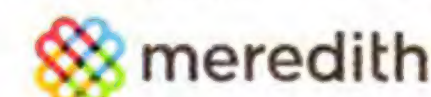
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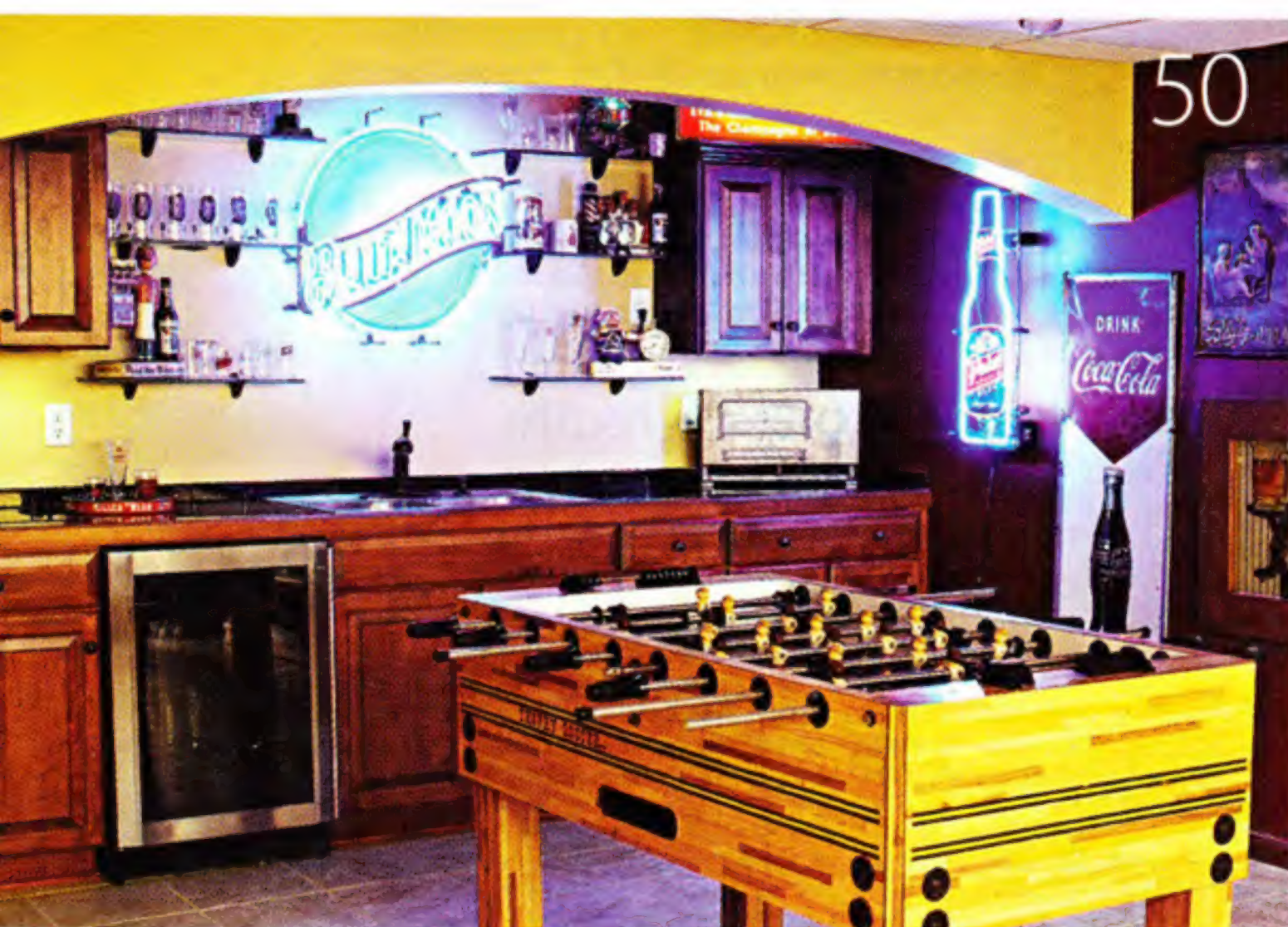
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Jim Cann, Woody's uncle, hand-carved a 13x28" arcade sign modeled after a similar sign at the Cedar Point Amusement Park in Sandusky, Ohio.

## The bold and the beautiful

This basement underwent a dramatic transformation from unfinished to wow! Now it boasts bright colors, a surround-media room, and spacious game room. Step behind the scenes to see how it was done.

**A**fter moving into a new home, Alan Woody ("Woody" to his friends) found himself staring at a bare-bones 1,476-sq.-ft. unfinished basement waiting to be molded by his imagination. The vision started simply: a game room that the entire family could enjoy. But plans for the space quickly evolved into an ambitious man cave with a bank of pinball machines, a custom-built gaming cabinet, a media room complete with 100" screen, and a home office.

Of course, it's a bonus that his daughter loves the basement. "The goal was to make a space where my daughter would like to hang out. I kind of used that as a rationale for the cave to

my wife, Robin," Woody says. "I said, 'She's becoming a teen, and we'll always know where she is if she's with friends in our basement!'"

After applying a little elbow grease, he has succeeded in that goal. "My daughter throws the best sleepover in the neighborhood each summer and turns the theater into a teen discotheque," he says with pride.

But a high-class hangout like that doesn't happen overnight; Woody spent years thinking up ways to repurpose the unrefined basement for entertaining, relaxing, and family time.

"We spent the first seven years making improvements to the upstairs and

*continued on page 7*

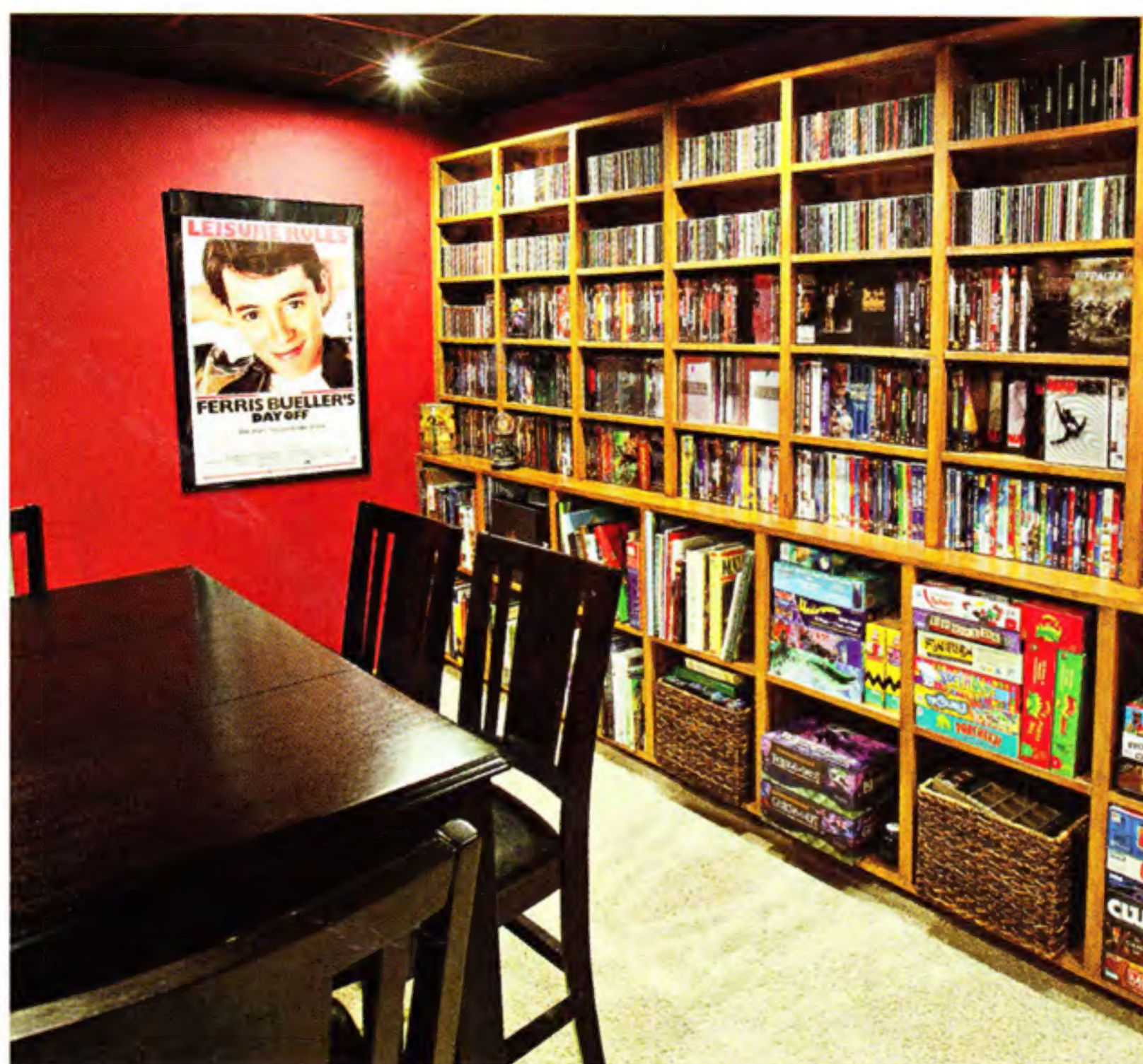




See page 8 for speaker-shelf details.



Black acoustical ceiling tiles give a nice theater vibe, but light-colored carpet helps friends see where they step in the darkened room. Woody installed a high-density, moisture-resistant carpet cushion (Triple Touch from Shaw Industries) in the media room. "You can sit on the carpet in there and the floor isn't cold at all," Woody reports. "it's very cozy."



Custom media shelves, *above*, organize the Woody family's collection of CDs, DVDs, board games, and books.



Woody's theater system includes a Dell computer running Windows Media Center, giving the family instant access to their entire library of digital photos, music, and movies via one handheld remote control. It also allows them to enjoy streaming content, such as YouTube videos, on the big screen.



# THE BOLD AND THE BEAUTIFUL



Alan Woody, left, and his brother, Dan, play Dig Dug on the video arcade game.







*continued from page 4*

the yard," Woody says. "But we knew we'd eventually want to do something with all that wasted space."

He started by creating a floorplan using CorelDRAW software. Woody then laid out everything on the floor with masking tape to see how things would fit during construction. Once the project was conceptualized, Woody and his father-in-law, Bob Keeler, set aside about a year's worth of nights and weekends to complete the project.

"The final construction ended up within inches of the tape," Woody says. "Some extra time and thinking things through on the front end made for smoother sailing during construction, and a better end result."

For the game room, Woody opted for commercial-grade free-floating vinyl plank flooring (Konecto Prestige Sunrise); a waterproof option that he installed himself. As general manager of an Ohio-based flooring distributor, Woody knows the value of premium-grade moisture protection. (See details on page 9.)

"I never had a doubt about the vinyl," Woody says. "I knew that water could be a problem in the basement, and it was worth it."

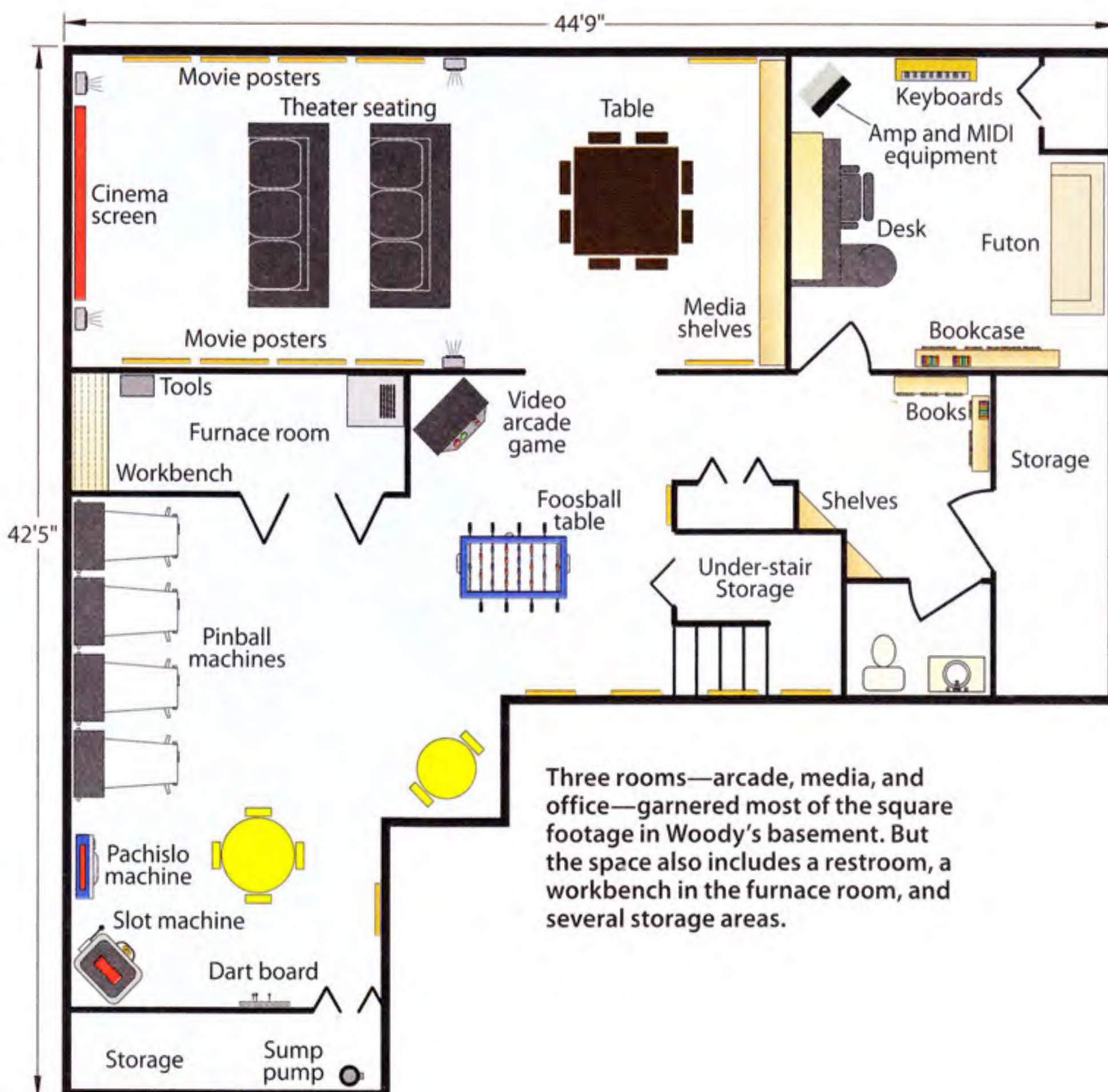
To finish off the ceiling, Woody installed 2x2' acoustical tile—black in the media room and white in the arcade room and office.

Thanks to the tools and expertise that his father-in-law provided, Woody finished the project on budget and on time. "It was a great bonding experience," Woody says. "But really, if we had to pay for all of that work, I don't know if we'd ever have gotten it done."

According to rave reviews from the neighbors, the arcadelike atmosphere is great for entertaining.

His buddy Rick Reed loves the place. "In the theater room, your attention is divided between the 100" screen and custom-built bookcases which run along the back wall," Rick says. The shelves are filled with movies and CDs Woody has been collecting for decades.

"The theater is heavily insulated so the sound doesn't carry to the adjoining office and game room, Rick points out. "We've watched movies, concert DVDs, YouTube videos, and listened to mp3s at





## THE BOLD AND THE BEAUTIFUL



Woody's office houses his computer, music equipment, and a sprawling collection of Dungeons & Dragons gamebooks and novels.



a volume loud enough to drown out wives' requests to leave the theater and come upstairs to eat. You can really lose track of time in this basement."

After he finished the build-out, it was time to bring in the toys. Woody's sanctuary boasts four pinball machines; a Foosball table; a dartboard; two slot machines; a shrine to his favorite band, Depeche Mode; and a custom-made arcade machine loaded up with thousands of video games from Alien vs. Predator to Zaxxon. "When we have parties, people will shout out old games and I'll try to find them," Woody says. "That becomes the game in itself!"

Woody can be proud of the space that he crafted. "It came out exactly as I envisioned it, and it suits us perfectly," Woody says. "On our relatively modest budget, I think I got the maximum return on investment." 🧑

Written by **Joe Stych**

Photos: **Lorenzo Flores, Stone Fruit Studios**

Illustration: **Roxanne LeMoine**

## WOODY'S SPEAKER TIPS



When Woody started his basement build-out project, the media-room components weren't in the man-cave budget. Woody figured the final decision on speaker wires was months ahead, so he ran ½" PVC inside the wall as wire chases, which allowed him to easily fish the wires through later. If a better grade of speaker wire becomes available, Woody can easily pull new cable through the chases.



With speaker shelves or brackets listing for about \$30 apiece, Woody sought out a less expensive and compact solution for his speakers. He had a glass shop cut 4x4" sections of ¼"-thick-glass; he then epoxied L-brackets (painted black) to them. Outlay: \$6 per shelf. Woody likes an added benefit: The speakers are less likely to get knocked off the small shelves by guests passing by in the darkened media room.



# Install vinyl flooring in a weekend

**W**hen Alan Woody started planning his basement retreat, selecting a floor covering was one of his easiest decisions. Woody (as he's known to friends), has worked in the flooring business for more than 20 years.

"The new vinyl flooring products on the market today are incredibly easy to install," Woody says, "even if you haven't completed a DIY flooring project like this before."

"I installed a floating vinyl floor, which means there's no adhesive applied to the subfloor; in my case, concrete. Apply pressure from a hand roller, and the planks adhere to each other. You can start and stop whenever you need to, and if something is crooked you can peel it up and fix it before proceeding."

"Floating vinyl flooring is essentially waterproof. So a squeegee, a shop vacuum, and a dehumidifier are all you need to get your man cave back in business if you've had basement water issues, like I did."

Woody installed 800 square feet of Konecto's commercial-grade Prestige flooring (color "Sunrise", \$3.50/sq. ft.; [konecto.com](http://konecto.com)) over a weekend. Shaw, Stainmaster, Mannington, and Armstrong offer similar products.

After allowing the boxes of 6x48" flooring to acclimate in his basement for 24 hours and thoroughly sweeping and vacuuming his floor, he was ready to begin. Here are the basic steps Woody followed to install vinyl-plank flooring.

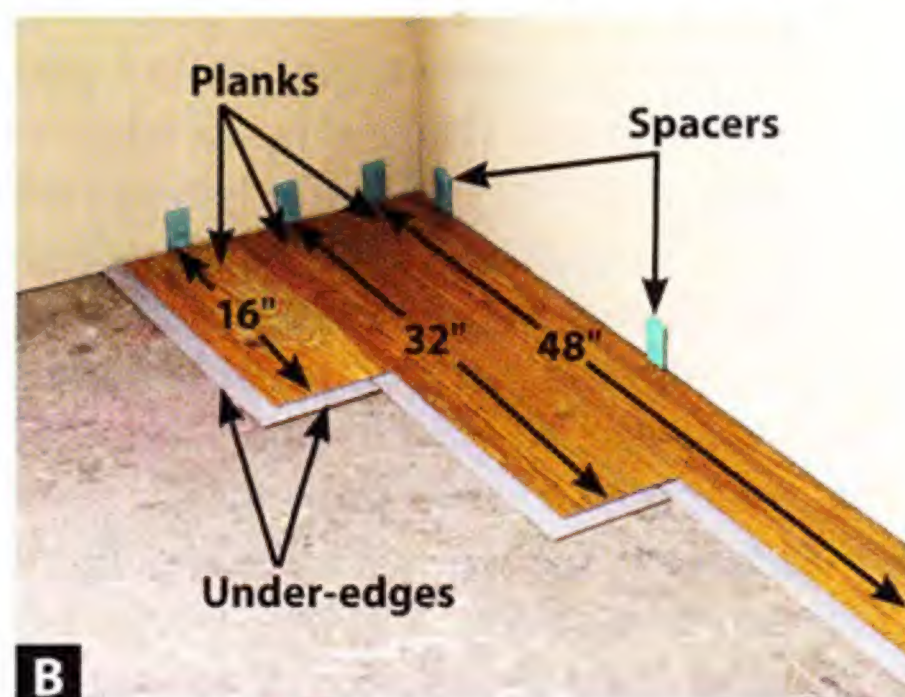
**1** Without securing the planks to each other, place the first row of loose planks end to end. If you end up with a short

piece of planking (less than 6") at the end of the row on the opposite wall, trim the length of the first plank. With a straightedge and utility knife, score across the plank, and snap it.

**2** Trim the planks for the first row as shown in **Photo A**. Start in a corner and proceed from the wall, placing the trimmed edge toward the wall. To allow



**A** For the first row, cut off the over-edge that will butt against the wall. Vinyl planking cuts easily with a standard utility-knife blade.



**B** For a random appearance, stagger the seams in each row of vinyl flooring. The full lengths of these planks measure 48".


for floor movement, use 1/4" spacers to create a gap at the wall [**Photo B**]. (Molding will cover the gap.)

**3** When securing two planks, place the over-edge on top of the under-edge, as shown in the drawing *below*. Use one hand to hold the in-place plank and the other hand to guide the edge of the next plank into place, creating a tight seam. If necessary, push the planks together after making the connection. Then roll down the joint with the hand roller.

**4** If the seam has a gap, slowly lift the top plank away from the bottom plank, reinforce the bond with Konecto Repair Adhesive, and reapply the top plank.

**5** Start the second row with the plank cut to two-thirds length (32"). If the layout of the room permits, use the left-over plank at the opposite end of the row. Start the third row with the plank cut at one-third length (16"). Continue this pattern for the remainder of the rows to be installed.

**6** To fit planking around pipes or other objects, make a pattern from heavy paper or cardboard. Then place the pattern on the plank and trace the outline. Cut along the lines using a utility knife or heavy-duty scissors, and lay the plank.

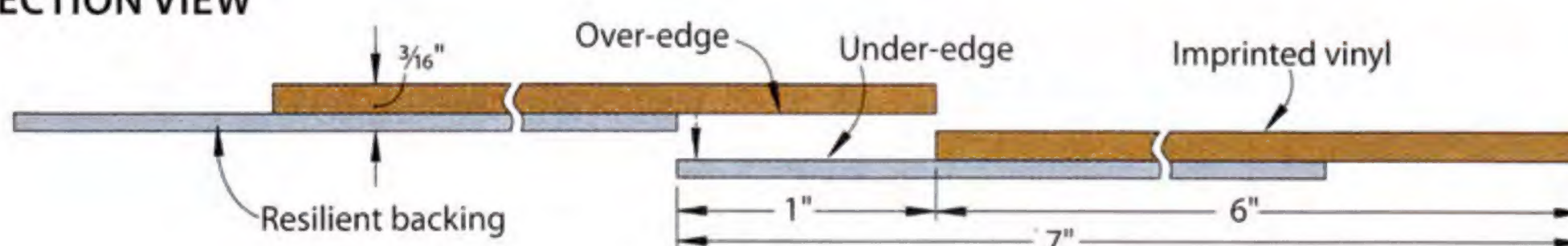
**7** After applying all the planks, use a 75- or 100-pound three-section linoleum roller on the entire floor. 

Photos: **Lorenzo Flores, Stone Fruit Studios**

## THE TOOLS

- Utility knife and replacement blades (Change blades often; Woody used 10 blades).
- Straightedge or carpenter's square (24" to 48")
- 6"-wide hand roller (Purchase at a hardware store.)
- 75- or 100-pound linoleum roller (Rents for about \$15 a day from a hardware store.)
- Konecto Repair Adhesive (Used to reconnect misaligned planks.)

## VINYL FLOORING SECTION VIEW







# Home media systems

Home audio and video evolves constantly. Learn these basics so you can shop smart.

**Y**ou've seen the ads for HDTVs and felt the gut-punch of deep bass in the theater, and your favorite movies are now readily available in high definition. The time has arrived to create your own home theater, where you can enjoy sports and action movies with a fantastic picture and the best sound. But where to start? This handy guide sets the stage by explaining the audio and video fundamentals and offers suggestions on how to put together a system.

## 3 ways to buy

When designing your home-theater system, you have three options for getting the necessary components. Each has advantages and disadvantages.

**Theater in a Box.** Big-box retailers sell "theater-in-a-box" systems—everything you need conveniently bundled.

The primary advantage: You know all the components work together. But you may have trouble finding ports to connect legacy devices, such as your VHS player or turntable, into the system. You may need help making your new equipment work with your cable or satellite system. And, you have few choices on appearance of the components.

**Do-It-Yourself.** Select individual components on your own. You buy the system you want customized for your room. Downside: You have to become well-versed on each type of component.

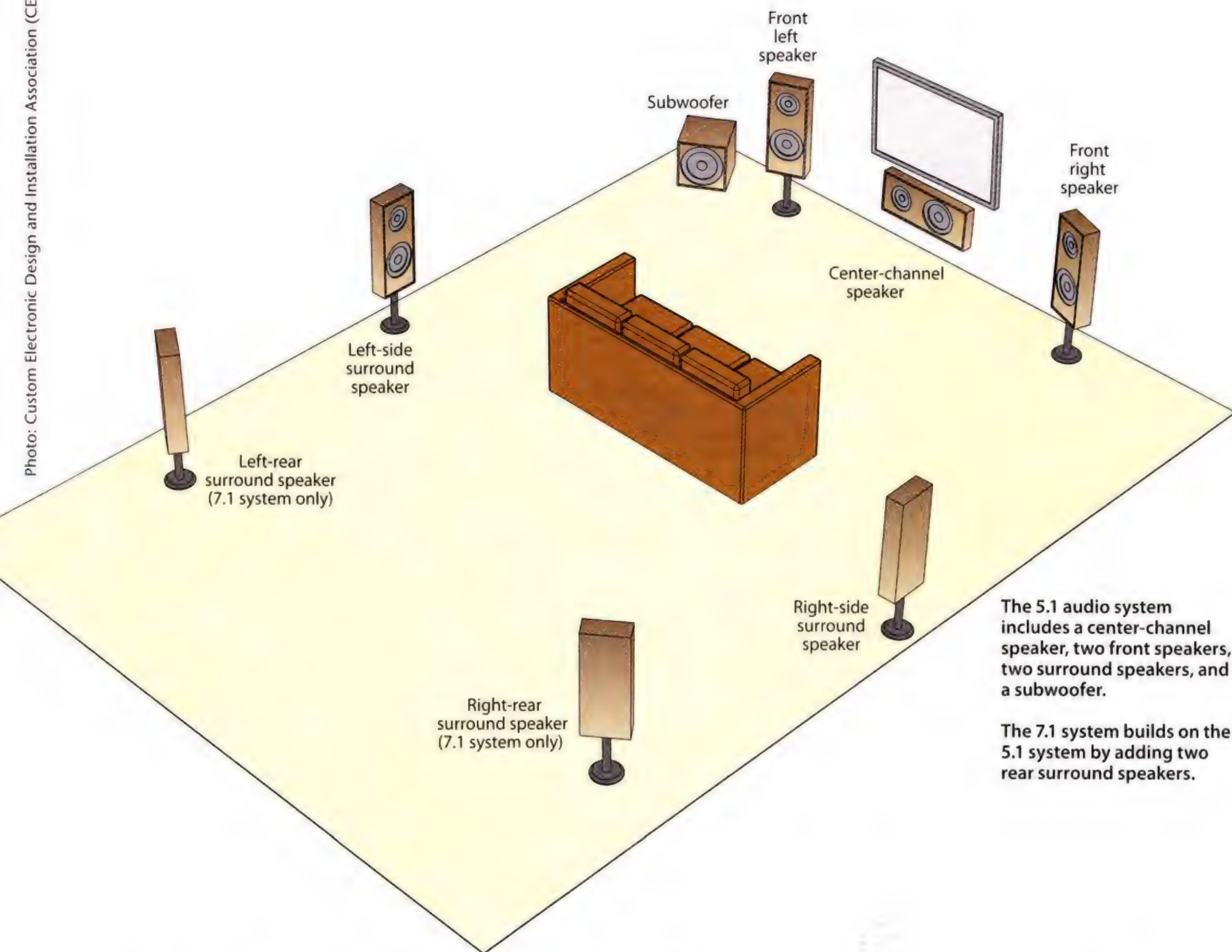
**Bring in the Consultants.** Go to a store dedicated to building home theater systems, let them do the customizing, and have them install it. You get the best system for the space without becoming an A/V expert. Downside: All that expertise comes at a cost.

## 4 key components

**Sources of Content.** Know what type of content you want to play through the system. 3D movies require a compatible player and TV. Add a turntable if you enjoy vinyl records. Does your TV signal come from cable, satellite, off-air, or a combination? Will you hook up a VHS deck for your older material? And don't forget game consoles. If you want to stream video to your TV from an online source, such as Netflix, purchase a component with Internet capability.

**Receiver.** The receiver acts as a hub, distributing signals from your content sources to your TV and the speakers. Be sure your receiver has enough—and the right kind—of inputs to handle all the devices you want to plug into it. Also, take a moment to ensure the receiver can power the speakers you select.





The 5.1 audio system includes a center-channel speaker, two front speakers, two surround speakers, and a subwoofer.

The 7.1 system builds on the 5.1 system by adding two rear surround speakers.

**Speakers.** Today's systems feature surround sound with either five or seven speakers, along with a subwoofer for the deep bass sound, as shown *above*.

The **center channel** amplifies dialogue so voices appear to come from inside your TV screen. The other system speaker cabinets include **woofers** (low-frequency sounds; think woofing dogs), **tweeters** (high-pitched sounds; think birds) and **midrange drivers** (the most significant sound spectrum, including human voices and most musical instruments).

The **subwoofer driver** or speaker (the ".1" in 5.1 and 7.1 systems) requires a separate, heavier cabinet design to accurately reproduce low bass without sound distortion.

**TV Screen.** Size the screen appropriately for the type of programming you want to watch and for the space. See **8 Tips For Buying a New TV** on page 13.

## 4 things to do when buying

Regardless of where or how you buy your components, **ask a lot of questions** of yourself and of the seller before purchasing. If you walk into a store and a salesperson tells you what you need without asking a few questions first, walk away and seek out a store or service that will work with you to get the system right for you and your home.

**Make a Sketch.** At the very least, use scratch paper to map out the room for your home media system, including dimensions. In the next step, you'll match the sound system to the room size.

**Count Your Speakers.** Surround-sound systems, designated as 5.1 or 7.1, as shown in the drawing *above*, rule today's market. The first number designates the number of speakers and the second represents the subwoofer, the speaker that provides the low-end thump in music and rumble in action

movies. The typical 5.1 system, adequate for most rooms up to 15×15' or roughly 225 square feet, has a center speaker located above or below the TV screen, one each to the left and right of the screen, one each to the left and right just behind the seating, and one subwoofer. A 7.1 system—the next step up—adds another pair of speakers behind the primary seating.

Prices start in the \$400 range for a system from a big-box retailer; you could easily spend over \$10,000 for top-of-the-line speaker systems.

**Bring Along Your Favorite Tunes.** What you listen to may indicate the speakers to buy. Different speakers reproduce certain kinds of music and sounds better than others. Take your favorite CD or iPod tunes to the store and have the sales staff play your music so you choose the speakers on which it sounds best.





## Speaker height: Get it right

After you decide on a speaker system that matches your budget, take extra steps to be sure your speakers are at ear height when you sit in your favorite chair. See one solution *above right*.

## Down to the wire

The wires connecting components of your home theater can make a difference. High-definition TVs require HDMI cables. Without them it's likely you are not watching true high definition. Harry Aller, owner of AudioLabs in Des Moines, Iowa, says he often sees systems that include a pricey high-definition TV but don't include the right connections to maximize it. "Some shoppers spent big money on the TV but they didn't spend the little money on the cables, and what they got was expensive regular TV," he says.

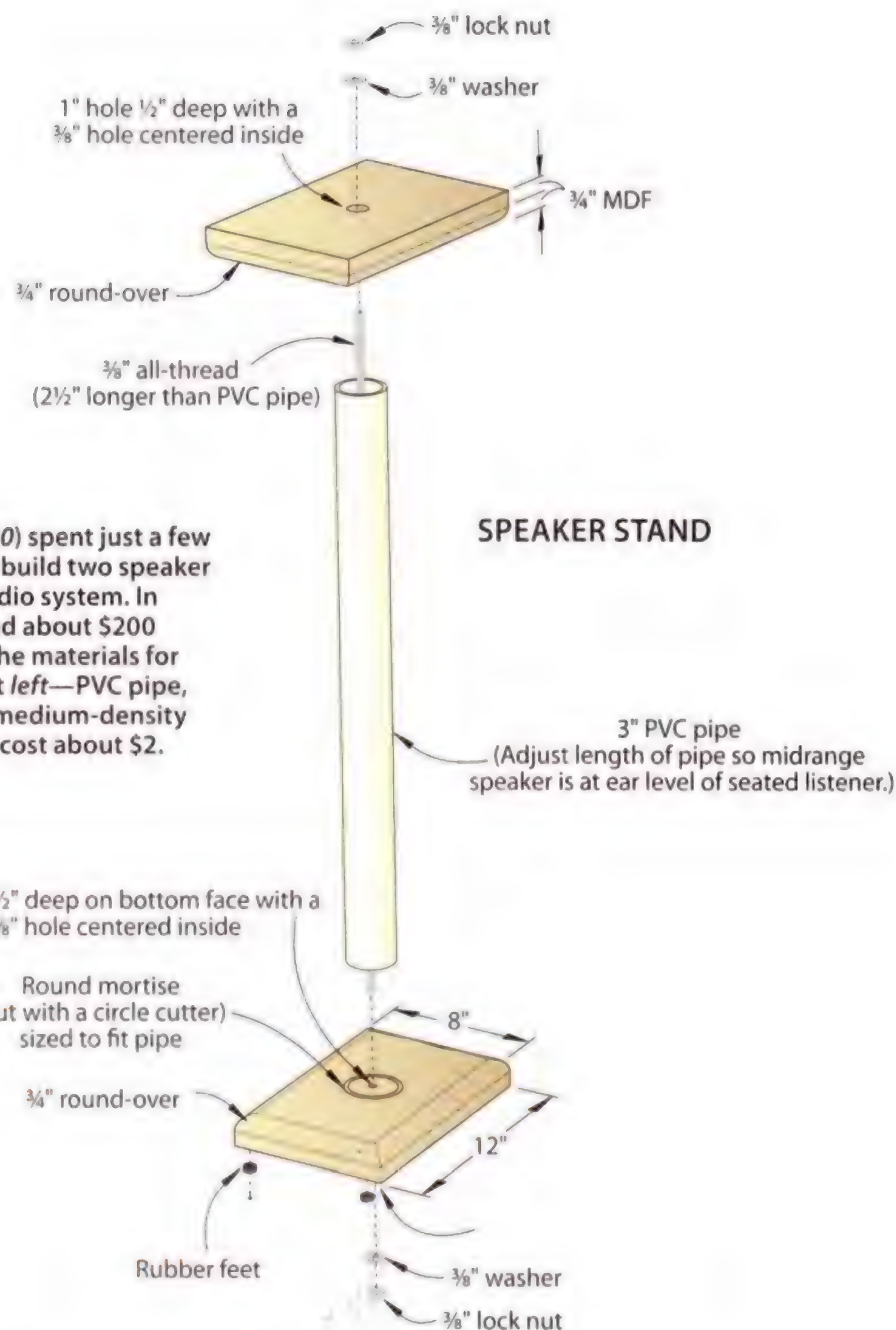
Likewise, Aller recommends buying appropriate-size speaker wire to get the audio signal to your speakers. "We often see the really cheap, thin wire that doesn't work well," Aller says. "We call it spaghetti wire. If you want good sound, it's just a few cents more per foot to invest

in speaker wire that's a proper match. Focus on the gauge of the wire and forget about the high-price connectors.

"I'd describe oxygen-free 14/2 speaker wire as a minimum budget wire for 5.1 and 7.1 systems. The 'oxygen free' copper formulation doesn't contribute to sound quality, but it does reduce corrosion. It's the degradation of the actual copper strands that reduces sound quality over time."

Shop around for wire. Sound and audio specialists often sell wire and connecting components at a lower price than big-box stores, hardware stores, and home centers.

If you are framing walls for a new media room, add 1/2"-diameter chases for your speaker wires and 2"-diameter chases for primary audio-visual cables and connectors. (For a tip on including chases for speaker wires when framing walls, see *page 8*.)



Bill Krier (see *page 50*) spent just a few hours in his shop to build two speaker stands for his 5.1 audio system. In the process, he saved about \$200 over retail stands. The materials for the speaker stand at *left*—PVC pipe, all-thread rod, and medium-density fiberboard (MDF)—cost about \$2.



**18/2 speaker wire;**  
about \$0.49/foot  
(hardware store)



**14/2 speaker wire;**  
about \$0.99/foot  
(hardware store)



**14/2 speaker wire  
(oxygen free); \$0.55/foot**  
(specialty store)



## 8 tips for buying a new TV

**Use a Tape Measure.** Before you go shopping, measure the space where your TV will rest. Don't forget to measure the distance from the desired location to the preferred seating for viewing.

**Light it Like Home.** While in the store, view the TV in the kind of light you'll be watching it in. If you watch a lot in the daylight, view the screen in the bright lights of the showroom. If you have your own darkened theater, look at it in reduced lighting.

**Establish a Budget.** Your goal should be buying the best TV you can afford, not the best TV your credit rating can bear.

**Where You Sit Matters.** If you'll be watching the TV from wide angles, a plasma TV provides better color and light from a greater range of angles than an LCD or LED screen. (Know, too, that the viewing angle can vary significantly by manufacturer and model.) LCDs are good if you view from directly in front of the TV for the most part, and they are generally more economical for screens 40" or smaller.

**Choose Matte or Gloss.** In a brightly lit room with reflections from windows or lighting, select a matte screen to reduce glare; in a darkened room, glossy screens perform better. The trade-offs: Matte screens reduce contrast and narrow the viewing angle; smudges and fingerprints jump out on glossy screens.

**Make the Connection.** Be sure the TV's connection types match your receiver. Before buying a high-definition TV, make sure you have the right cable and receiver to view HDTV.

**Take Your Own Content.** Stores play content that shows off the TV well. Ask the salesperson to queue up a favorite DVD or Blu-ray disc you brought from home. You should see what familiar content looks like on the screen.

**Stay in Control.** Be sure to familiarize yourself with the remote. Is operating it intuitive? Does the lettering show up in a lighted room? In a darkened room? How many remote-control devices will your complete system require? Can it operate other components or will you end up with a table full of one-function devices?

## GLOSSARY

When buying a home theater, you will quickly find an alphabet soup of acronyms and obscure technical words describing different parts of the system. Learn this short list of terms to be a smart buyer.

### BLU-RAY

A digital high-definition video on a DVD-size disk.

### DLP

Digital light processing. Light shines on a screen to create a large image and a theaterlike feel. This compact component (about 4×12×10") creates a large-screen experience. Best viewed directly in front of the screen. Generally priced lower than LCD/LED TVs.

### DVD

Digital versatile disk. A video disk that delivers digital content in standard definition.

### DVR

Digital video recorder. A DVR allows you to record and save programs to a computer hard disk for viewing at your convenience. Perhaps the best known version is TiVo. Many satellite and cable companies provide DVRs in their receivers, ensuring the DVR works seamlessly with their system.

### FLAT-PANEL TV

Flat-panel TVs come in three basic types: LCD, LED, and plasma. Most are designed to hang on the wall like a picture frame, but can stand on a TV stand as well.

### FRONT PROJECTION

See DLP.

### GAMING

Using your TV and theater system to play video games from an X-Box, Wii, or Playstation console.

### HD

High Definition. A TV picture made up of either 720 or 1,080 horizontal lines. By comparison, standard definition (SD) consists of 480 horizontal lines.

### HDMI

High-definition multimedia interface. A digital connection between a TV, receiver, or player (Blu-ray) that allows the maximum transfer of digital data.

### LCD

Liquid crystal display. A category of flat TV screen good in brighter rooms. But sometimes the viewing angle is limited, with the best view straight on.

### LED

An LCD TV that uses LEDs (light-emitting diodes) to create the light that shines through the screen. LEDs are extremely power-efficient.

### PLASMA

A flat-panel TV that is easily viewable from most angles and typically has deeper blacks than LCD. It has good color and uses the same basic technology as fluorescent lights but in tiny form. Typically used for screens 40" or larger.

### REAR PROJECTION

Rear-projection TVs require a deep TV set with a big footprint. As a result, this form of TV is falling from favor. If you have the space in your media room, rear projection provides a way to add a big screen at a relatively low cost.

### REFRESH RATES

How many times per second a screen redraws the image. A refresh rate of 60 Hz (most common) means the image redraws 60 times per second. Some TVs have rates of 120 Hz and even 240 Hz; higher refresh speeds create smoother pictures during high-speed action typical in sporting events and action movies.

### VHS

Video home system. An old format of recording video on magnetic tape.

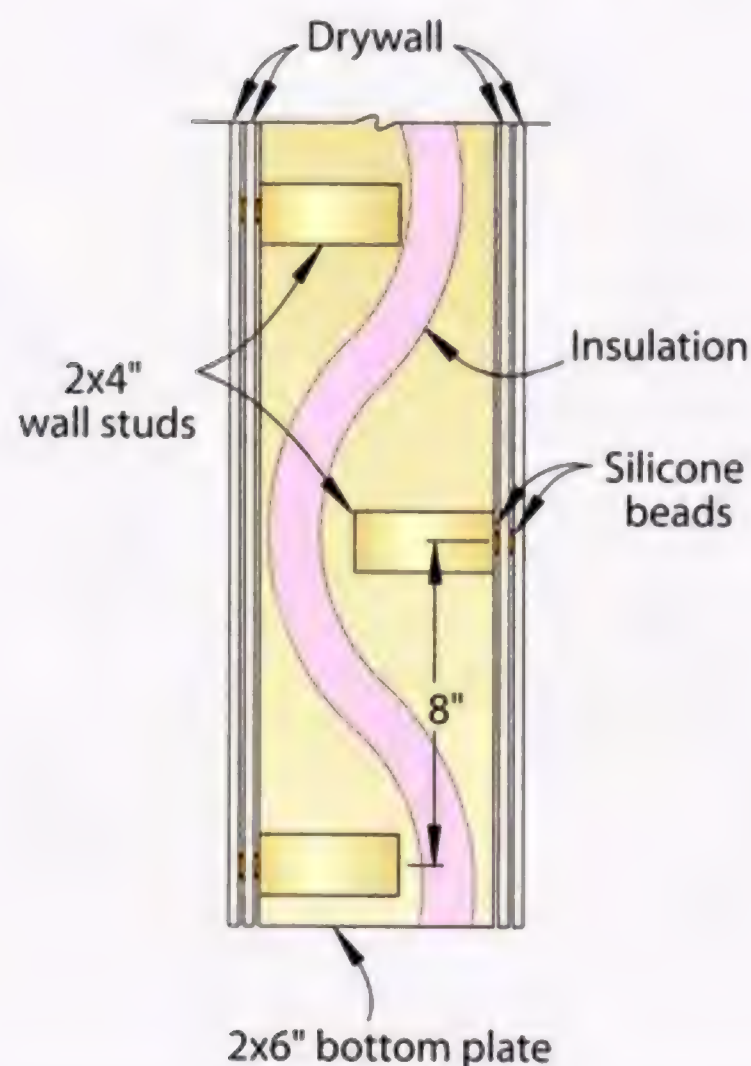


## STOPPING THE SOUND

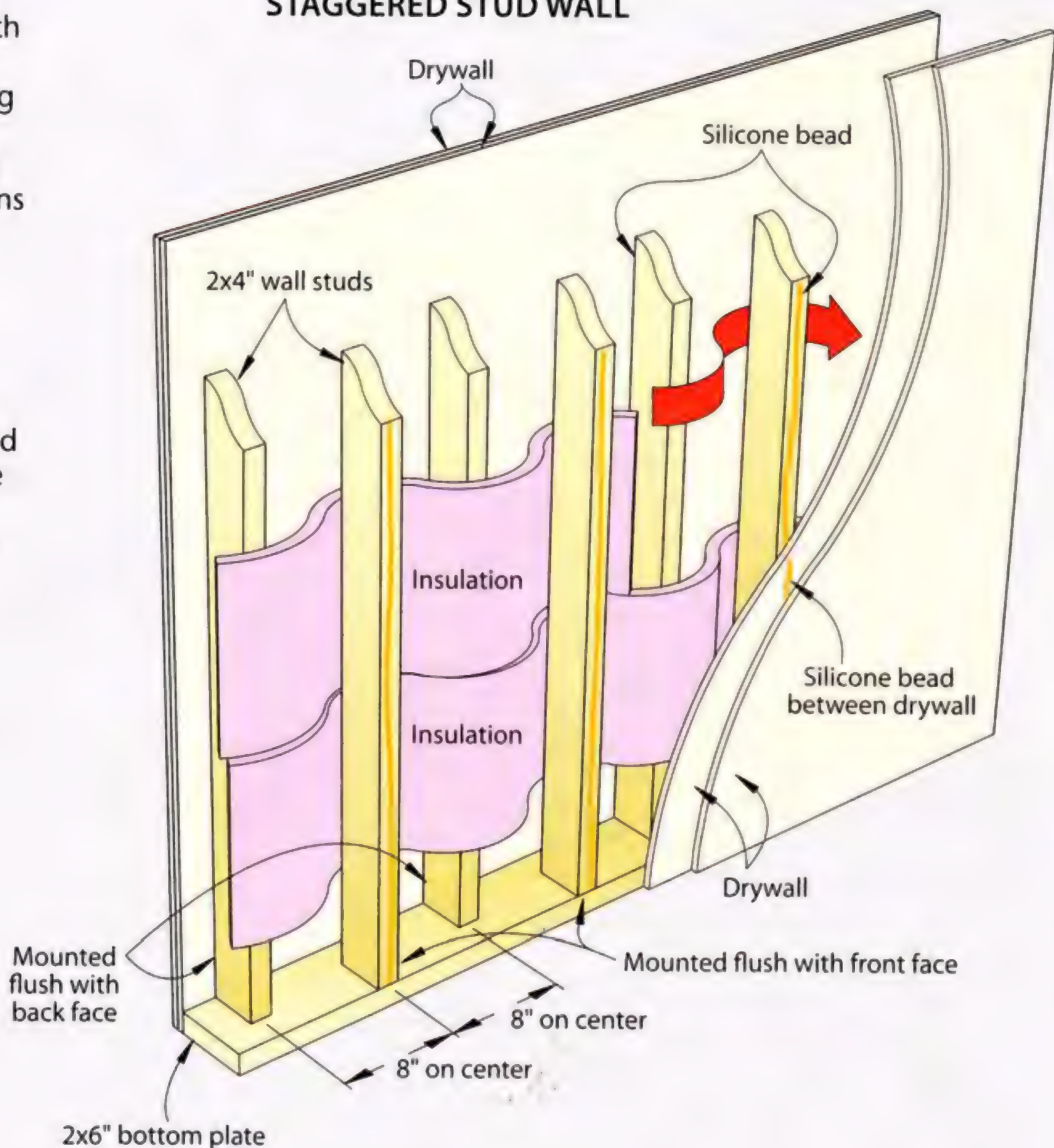
When considering a new space for a media room, think through how you will contain the sound in the room. If it has sound-reflective surfaces, such as hardwood floors and smooth walls and ceilings, bouncing sound will diminish the audio experience. Simply adding soft furnishings, maybe rolling out a rug to cover a large portion of the floor and adding decorative wall hangings or curtains, dampens the “live” surfaces tremendously.

To prevent home-theater sound from moving into the rest of the house, select sound-damped drywall panels such as QuietRock drywall and QuietRock doors ([quietrock.com](http://quietrock.com)). For the ultimate in sound-proofing, build the room walls with staggered studs so that every other stud only abuts one surface of the wall rather than both. Then weave insulation batts between the studs, as shown in the diagrams at *right* and *below*.

TOP-SECTION VIEW




STAGGERED STUD WALL



## DON'T TRASH THAT TV

Instead of hauling your old TV out to the curb, seek out an environmentally friendly option. Although older TVs have fallen from favor and it may be difficult to sell them in classified ads or online, someone else using the TV—and appreciating it—is the best way to stay green.

The EPA Web site ([epa.gov/osw/conserve/materials/ecycling/donate.htm](http://epa.gov/osw/conserve/materials/ecycling/donate.htm)) offers links to find local recyclers of old electronic equipment. Some big-box retailers will dispose of your TV for a fee and include in-store coupons with your receipt. If you must dispose of it, contact your local waste-management company to learn about the proper method of disposal. Or, Google *television disposal*. 



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## It's all done with mirrors

There's a bit of magic going on in Mark Potter's Harley hangout. This garage bump-out looks twice its size, due in large part to a reflective wainscot that rings the room.

**T**o look at Mark Potter's jaw-dropping Harley-Davidson-themed garage, you'd never suspect this guy is a champion scrounger who knows how to squeeze a budget. And yet you'd swear everything in his place came from a Harley showroom.

After contracting with a garage builder to frame the 12x16' addition with skylight to the back of his two-stall garage, Mark and friends took over from there. "We did the insulation, wiring, dry-wall, and all the painting," Mark says. "I saved a ton of cash.

"I saved a lot on the floor covering, too. I put down gray hard rubber flooring that was salvaged from a local warehouse. It's great quality—and didn't cost me anything—but it didn't have the look I wanted. Then I put vinyl composition tile [VCT] over the top, alternating black and white 12x12" tiles. The coin design from the rubber flooring transmitted through the VCT to give a hint of pattern. I'm happy the way it turned out, but it's just an accident."





A 36x12" custom sign (about \$60) —hangs above Mark's single-car overhead garage door.



Above: Good friend and Harley buddy Jackson Hall, *left*, relaxes with Mark over beers around a pub-height table (a kitchen table in its previous life). In the corner is a salvaged Chicago traffic light that Mark rewired with low-wattage bulbs.

*Left*: After an evening ride, Mark rolls his Harley into his man cave. A sidewalk, *foreground*, leads to the main driveway.

*Previous page*: Mark parks his 2007 Harley-Davidson Softail Deluxe on a 8x4' pad of interlocking tile.







To track his Softail maintenance, Mark uses an Excel spreadsheet clipped to a classic Harley image he found for \$5 in a close-out bin at a Harley dealer in California.

"This was just supposed to be a place to park my bike. You know how that works," Mark says with a chuckle. "First, I had to pay back all my friends for helping with the construction. But pretty soon this grew into a place for beer and snacks with friends, to watch sports and listen to music—a year-round hangout.

"One of the first things I did was repaint an old bistro table from our first kitchen with Fleckstone [plastikote.com] and added a vinyl Harley logo and a glass top. Then I bought matching Harley stools.

"Once I got into it, the ideas kept coming. My wife, Christie, is an interior decorator, so she really helped pull things together.

"Of course the stainless-steel panels really give the room a bar or club feel and make the space seem a lot larger. Plus, it's a great way to highlight my motorcycle from all sides." (See more wainscot details on the *next page*.)

Before Mark knew it, his bump-out expanded *outside* to include an elevated deck, lower deck, and retaining wall. Mark continues to add Harley-Davidson collectibles, posters, and neon signs to upgrade his collection—sometimes just to stay a step ahead of his Harley friends. 🏍️

See Mark's friend Jackson Hall and another Harley-Davidson-themed garage on page 82.

See more images of garage and shop tours at [woodmagazine.com/shoptours](http://woodmagazine.com/shoptours)

## KEEP THE BUGS OUT

Minnesotans joke they endure two seasons: shovel and swat. To combat the hungry mosquitoes, Mark installed a roll-down screen (garagedoorscreens.com; about \$110) that requires less than five minutes to zip into place. Mark added a simple awning and a strip of valley flashing to keep rain off the screen.





## SMOKE AND HEAT: GOT THAT COVERED

Two ceiling-mounted 1,400-watt heaters extend the comfort season in Mark's garage. The three-speed units by Airworks (about \$50) run on household current.

Because Mark and his buddies have been known to enjoy cigars when they gather, he added a standard 8"-diameter bathroom exhaust fan to clear the air. "With the garage door up, the cigar smoke isn't much of an issue. But it's nice to have when there are a bunch of guys here and the garage door is down," Mark reports.



1,400-watt heater

8" exhaust fan

1,400-watt heater

## A SHINE THAT WON'T QUIT



"Hardly a person walks in here without commenting on the mirrorlike panels," Mark says about his wainscoting. The stainless-steel 36"-high panels—scrap material for commercial ovens salvaged by his friend Peter Burkauskas—make Mark's compact garage seem twice as large as the actual 12×16' dimensions. The material carries a 96-percent reflectivity rating.

Before installing them, Mark boxed in the concrete curb poured for his new garage slab (see drawing at left) with 1×4s. Then he attached the 1/32"-thick metal panels with double-faced tape. (His friend Peter located a metal fabricator to laser-cut the panels to size.) Quarter-round at the base and chair rail at the top help secure the panels that ring the Harley's home. "I think the stainless-steel panels ended up costing me a case of beer," Mark says. "Fortunately, I have a good network of friends for projects like this."

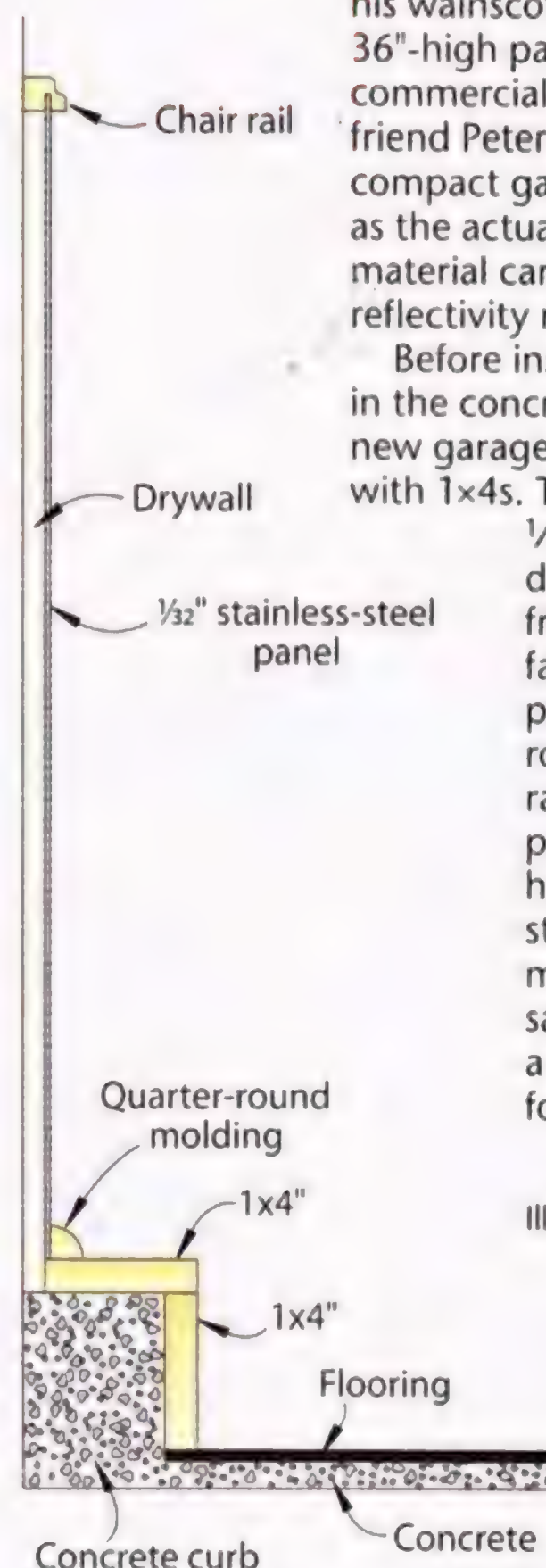
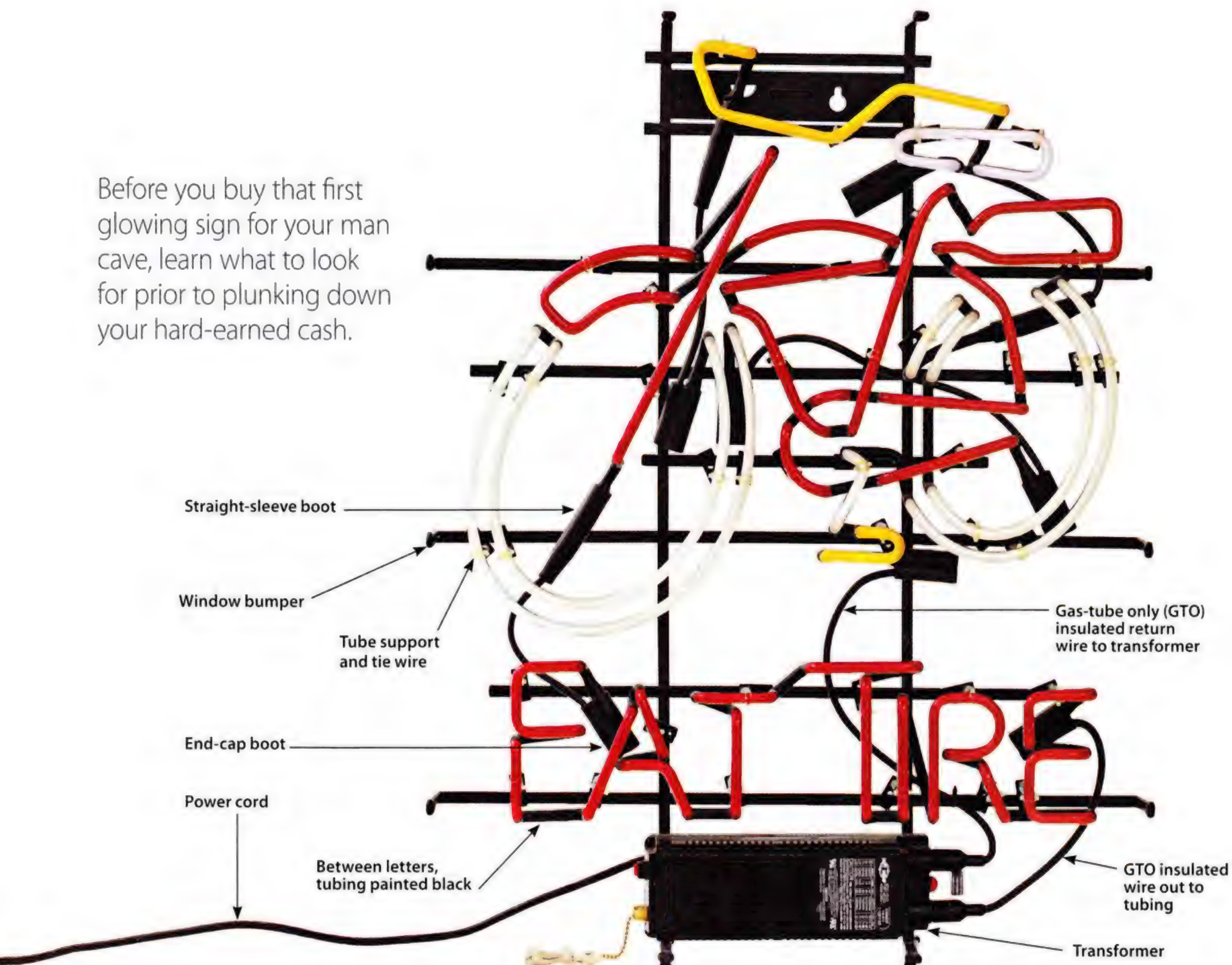


Illustration: **Roxanne LeMoine**



Before you buy that first glowing sign for your man cave, learn what to look for prior to plunking down your hard-earned cash.



# A guy's guide to neon signs

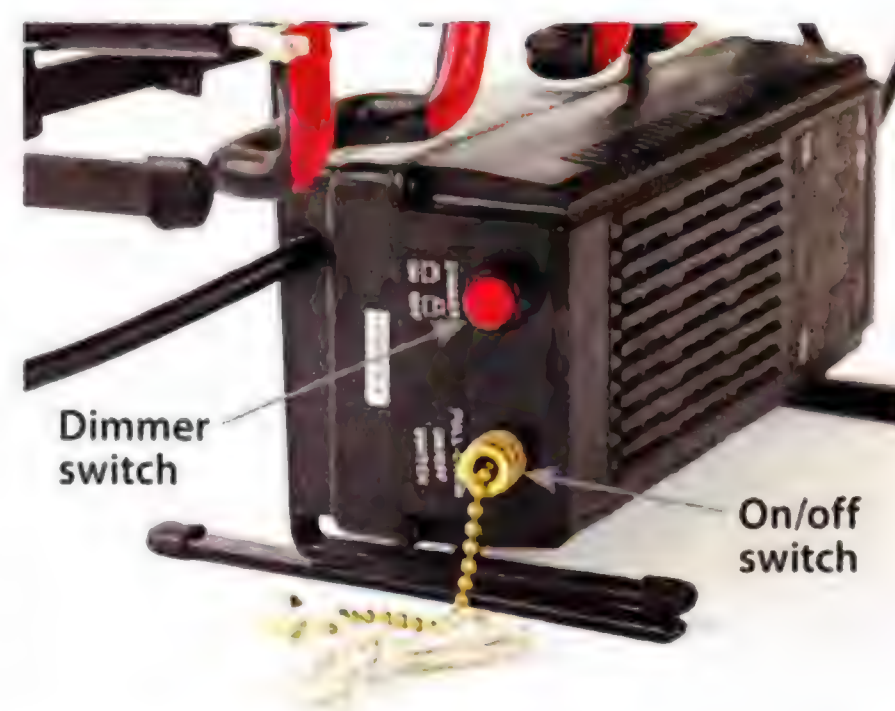
**O**pen for business! For decades, bars, cafes, car dealers, and shop owners across the U.S. have hung neon signs in their windows to reel in customers. It's hard to imagine a retail district or restaurant row without a sprinkling of glowing signs.

Today, you'd be hard-pressed to find a guy who hasn't at least considered adding a neon sign to his man cave. And for good reason, too. Maybe it's those vibrant colors that draw us in. Or perhaps some remembrance of our past—a classic sign at the Ford garage across town or a favorite bar. Whatever

the attraction, neon finds its way into many home retreats.

## Anatomy of a sign

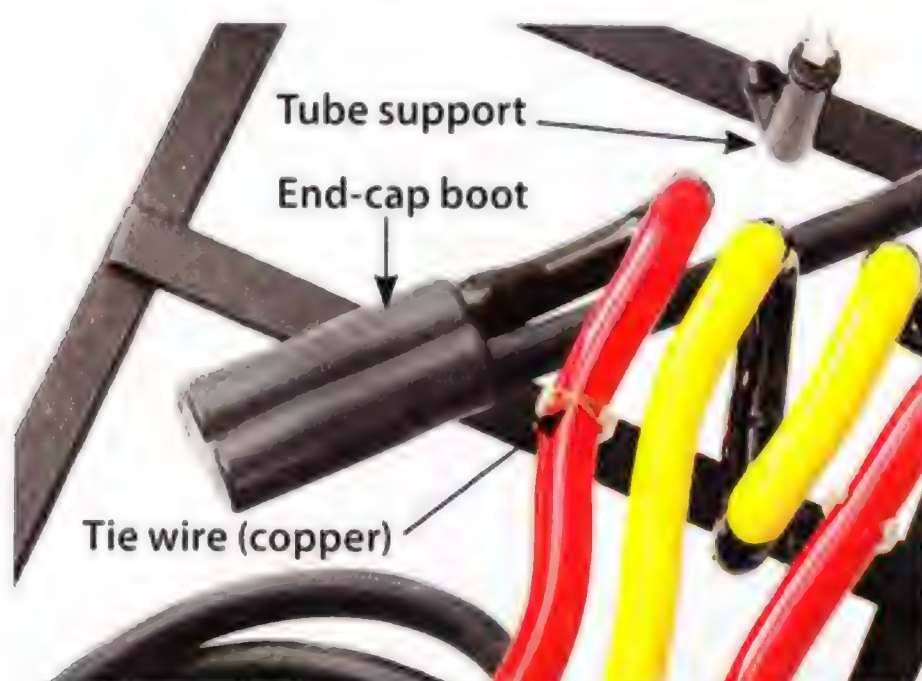
Think of neon lighting as a series of skinny, curved fluorescent tubes. A high-voltage **transformer** on the sign excites the inert gases found inside the tube—**neon** gas for reds and oranges; **argon** gas for the other colors—creating the colored glow. In the Fat Tire sign *above* and *next page*, the red comes from neon-filled tubes; the white, blue, and yellow originate from powder-coated tubes filled with argon.



The 9,000V electronic transformer for the Fat Tire sign *above* includes a dimmer switch.



In all, this sign has 10 sections of glass tubing. An electrode **boot** covers the union between electrodes and between an electrode and a gas-tube only (GTO) insulated wire connected to the electronic transformer. The **GTO wire** is akin to a spark-plug wire—it's designed for the high voltage required in neon signs.



## 9 neon buying tips

So how do you know if the neon sign you have your eye on is a bargain or a boondoggle? Neon technician Charly Conn of neonspecialties.biz has repaired and restored thousands of neon signs, so he knows what to look for in a quality sign. Charly offers this guidance when picking out neon for your man cave.

**1. Real deal or a knockoff?** As neon becomes more popular, importers have flooded the market with inexpensive knockoffs—especially true among beer signs. On the Internet, you can buy a knockoff sign like the Fat Tire sign at *far right* for around \$80.

The beer distributor actually owns the neon signs you see in bars and restaurants. Technically, they're not the bar's property to sell. But, there are seemingly beer signs for sale everywhere.

Alan Bloom, president of Zeon Corporation, a firm that specializes in neon signs for craft brewers, confirms that breweries now sell neon directly to individuals—the same signs previously available only to bars and restaurants.

You'll notice subtle differences, too, in the diameter and quality of the glass tubing, Bloom confirms. (Bigger tubing creates a brighter light but may require a larger transformer.)

You'll pay \$350 on the New Belgium Brewing Company Web site for the genuine Fat Tire sign, *above top*. On close examination, you'll notice the less-expensive sign at *right* doesn't match the neon colors of the real sign authorized

by the brewery. Sometimes low-cost vendors market these low-priced signs as "pub signs."

**2. Broken neon can be a deal-breaker.** Before buying a broken sign, consult a technician in your area who repairs signs. (Google *neon repair*, or ask your nearest outdoor sign company for a reference.) For a proper fix, the technician will replace all the glass between two electrodes—about \$75–\$100, Charly estimates. You can't just patch one letter, for example. Then get a repair quote, based on a photo of the damage. See **Mending Broken Signs** on *page 22* for more details.

**3. Ask to see the sign in operation.** Or request a photo of the sign lit up. If one of the sections appears dimmer, it could indicate improper assembly. A sign maker describes this as improperly burned-in.



When Jackson Hall (see *page 84*) bought the Fat Tire neon sign at *right* via craigslist.com, he knew it wasn't a genuine sign, but it fit his budget. Some differences, such as the red letters on the brewery-authorized sign *above* and the blue letters of the knockoff sign, are easy to spot.



To fix this, take the sign to a neon technician and have it burned-in again. In this step, the technician temporarily attaches a higher-voltage source to the electrodes, then lights up the offending section for a few minutes to redistribute the mercury in the tubing.

**4. Check for chipped paint.** Instead of powder-coated tubes (interior), some mass-produced signs are dipped in paint (exterior). Touch-up paint covers minor paint chips. But for broken painted tubing, you'll have a pricey repair to replace the entire painted section (not just the broken tubing).



**5. Look for an Underwriters Laboratory (UL) label** on the transformer. It's a sign that this important component has passed U.S. safety standards.

**6. Electronic transformers eliminate the hum** associated with vintage devices. The hum isn't necessarily a bad sign—only an indication of age. Electronic transformers weigh less than older models of the same power rating.

**7. New transformers may include dimmer switches.** In a small space, the option for a lower illumination level will be easier on your eyes.

**8. Flashing signs require fussy repairs,** or worse. It's next to impossible to obtain the replacement parts, Charly says. "And indoors, flashing neon signs will drive most people nuts," he adds.

**9. You can fix dirty.** Some used signs come coated with grease and smoke from a restaurant or bar. To clean, dampen paper toweling with Windex and wipe down the tubes. Easy now: Don't break the tubing by rubbing too hard. 🧑



## MENDING BROKEN SIGNS

Before



After



A broken section of neon tubing means that the entire sign may cast only a soft glow (best scenario) or the sign won't operate at all, as was the case of the damaged Corona sign at *left*. The "n" in Corona was broken at one of the tube supports. To repair this sign, Charly Conn replaced "orona"—the white tubing between two electrodes—and then recharged that section of the sign.

He also touched up the chipped red tubing (technically, white tubing painted red on the exterior) that makes up part of the parrot's tail feathers.

Repair ticket: \$80 for a neon sign that retails for about \$350.

## SHIPPING SUGGESTIONS



If you purchase a neon sign online, make sure the seller has experience and a track record in properly packaging these fragile signs. The seller should assume responsibility for breakage and filing the insurance claim.

Delivery companies expect honest answers when the package attendant inquires about the content—be sure the shipper clearly states the content. Before accepting a neon sign packed for delivery, UPS, for example, will inspect the package to be sure there's at least 4" of foam padding on all sides of the sign. Professional neon packers place many tiny pieces of foam between the tubes to prevent breakage. Signs shipped from the factory are always packaged that way.





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## Custom **neon** follows your script

Get your creative juices flowing! Work with a neon artist to create a custom sign that will become the focal point of your man cave.

**F**or decades, Allen Darrow has marked tools and inked lathe-turned wooden bowls with his distinctive “Darrow Arrow” signature. With a new basement entertainment room nearly finished, Allen was ready to blow up his signature—normally 1” or 2” long—into a 48”-long neon sign to set the tone for his basement retreat.

Allen met with neon artist Charly Conn (neonspecialties.biz) to plan his custom sign. With a concept drawing in hand (see **Photo 1**), Charly and Allen agreed on a finished size (12×48”) and selected glass tubing that’s powder-coated blue on the interior. And with that, Allen turned over the project to the neon artist.

Allen couldn’t be more pleased with the final products—so tickled, he asked Charly to build an identical neon sign for his shop. “It’s exciting to see my autograph in neon,” Allen says. “I love almost every neon sign I see, but no one has a sign like this!”



Neon artist Charly Conn, *left*, discusses the proposed artwork with Allen Darrow, who supplied a concept drawing of his signature on 8½×11” paper.



# ARROW



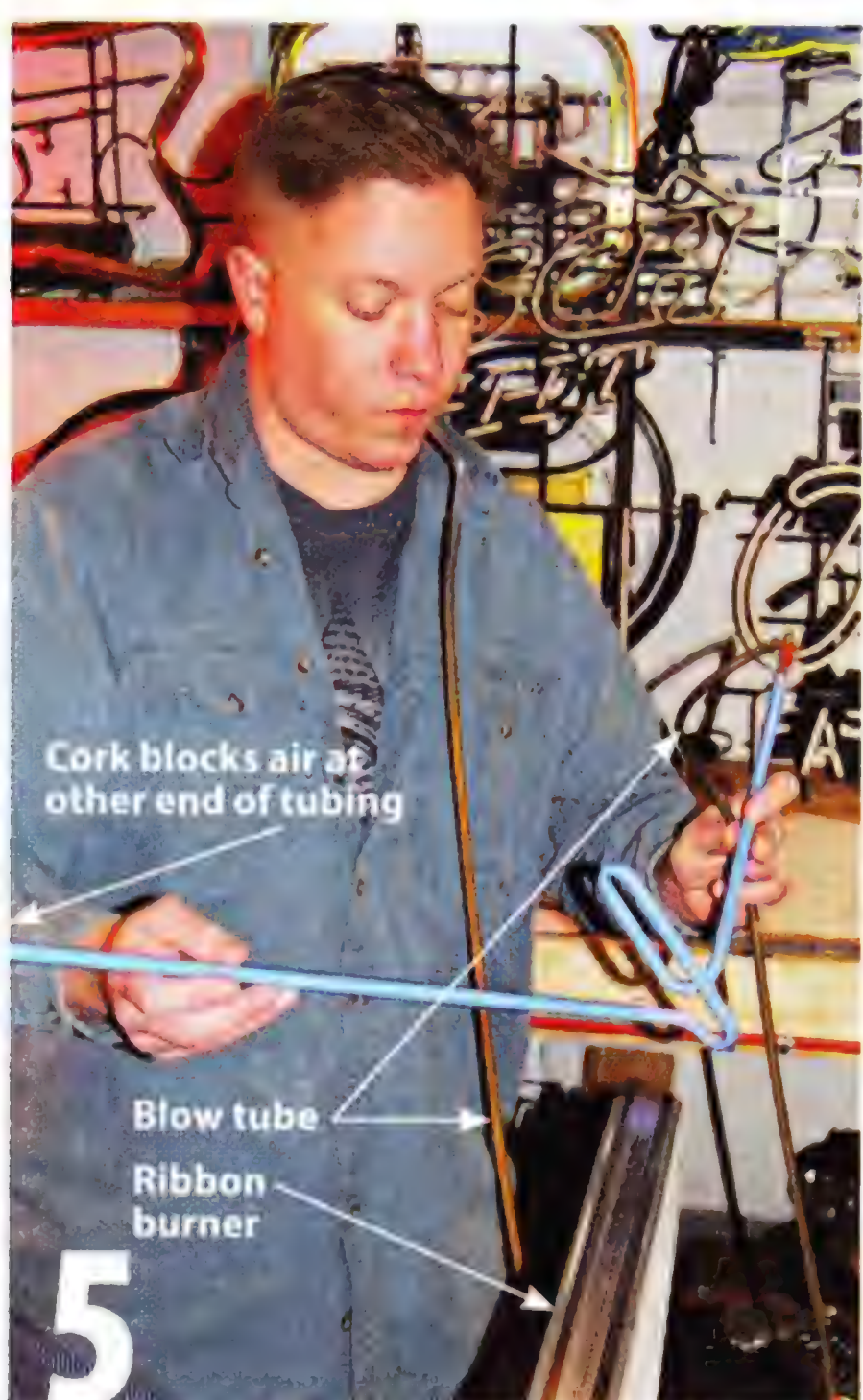
With a blade for plastics (Bosch T101BR) mounted in his jigsaw, Charly cuts the ½"-thick black acrylic that will become the back panel of the custom neon sign.



After peeling the protective paper from the acrylic, he wipes down the sheet with Windex to remove static electricity. The custom vinyl decal is ready to apply.



Charly removes the protective paper from the 48"-long vinyl sheet, then smooths the vinyl with a squeegee. He then sets aside the acrylic.



At the propane-fueled ribbon burner, our artist blows air into the glass tube, preventing it from kinking or becoming restricted while he forms tight bends.



With a full-size reverse pattern on his bench, Charly tweaks each bend in the still-warm glass. He continues pushing air through the blow tube.

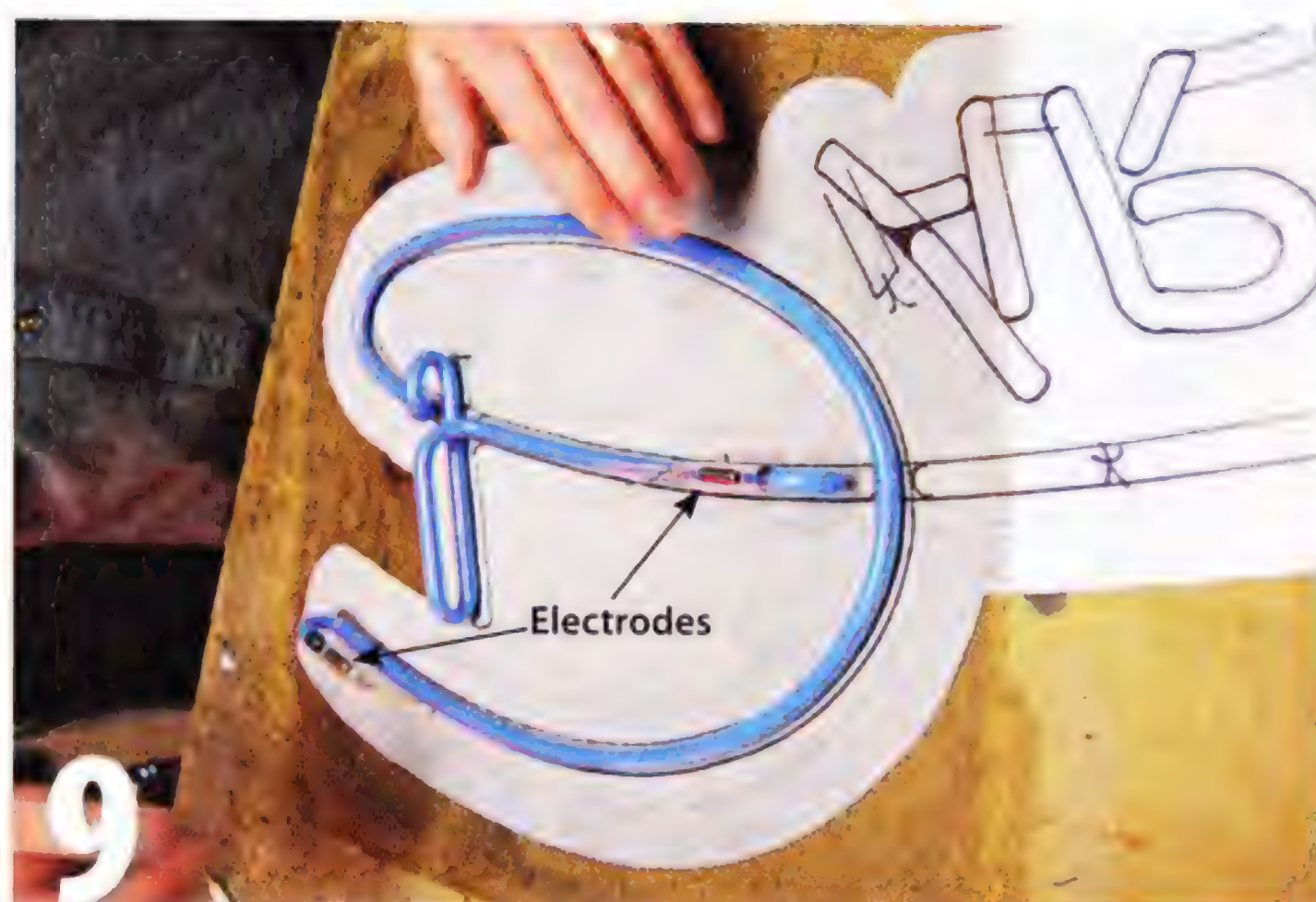


After heating the end of the first section of tubing, Charly slides an electrode into the tubing. His blow tube prevents the glass from collapsing.





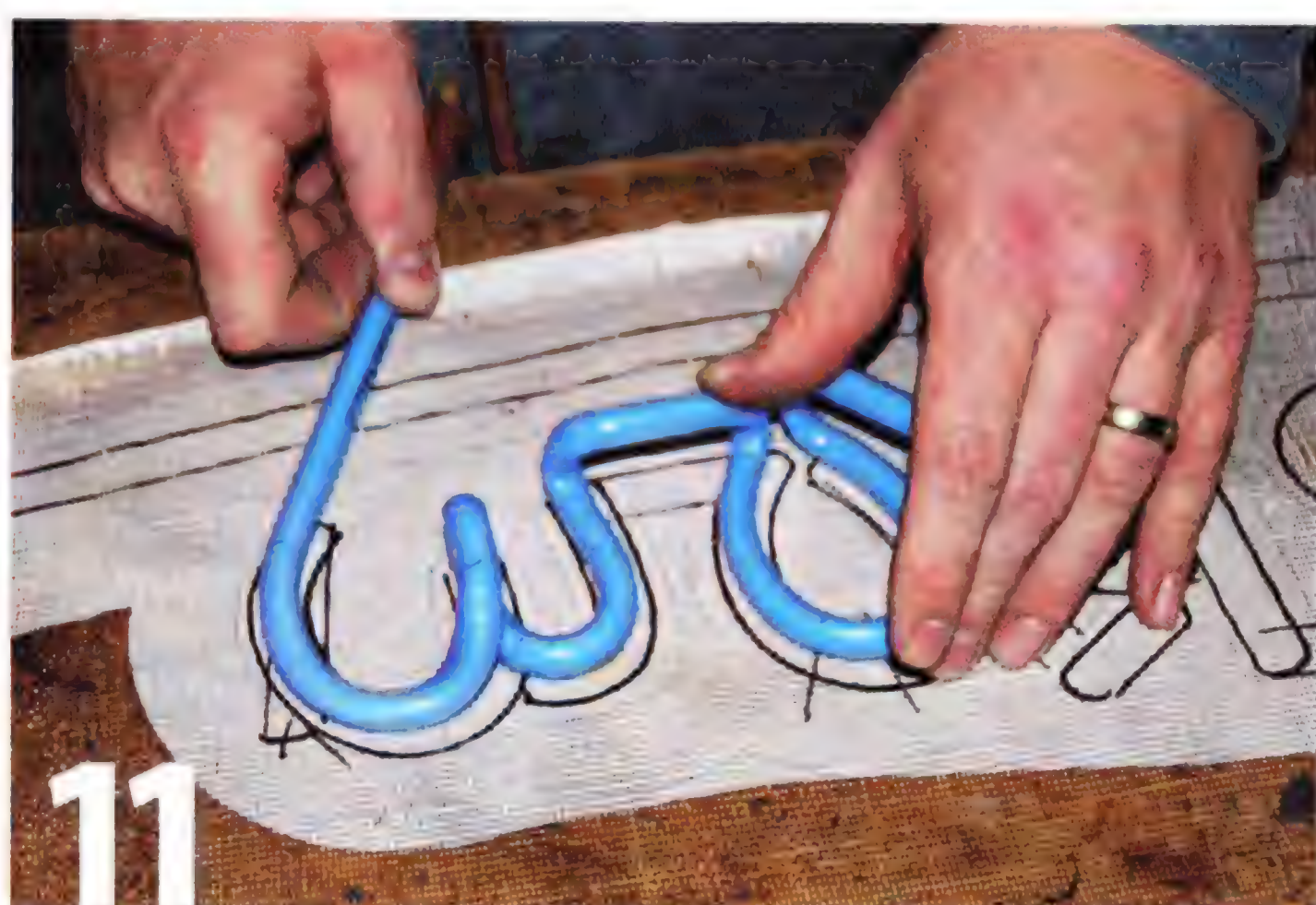
Using the flat bench as a reference surface, Charly presses the warm tubing into the same plane. "Wide curves take a lot of time to allow the glass to cool before heating another section," he notes.



As Charly finishes up the first section, he mounts a second electrode in the tubing and checks his work on top of the reversed pattern.



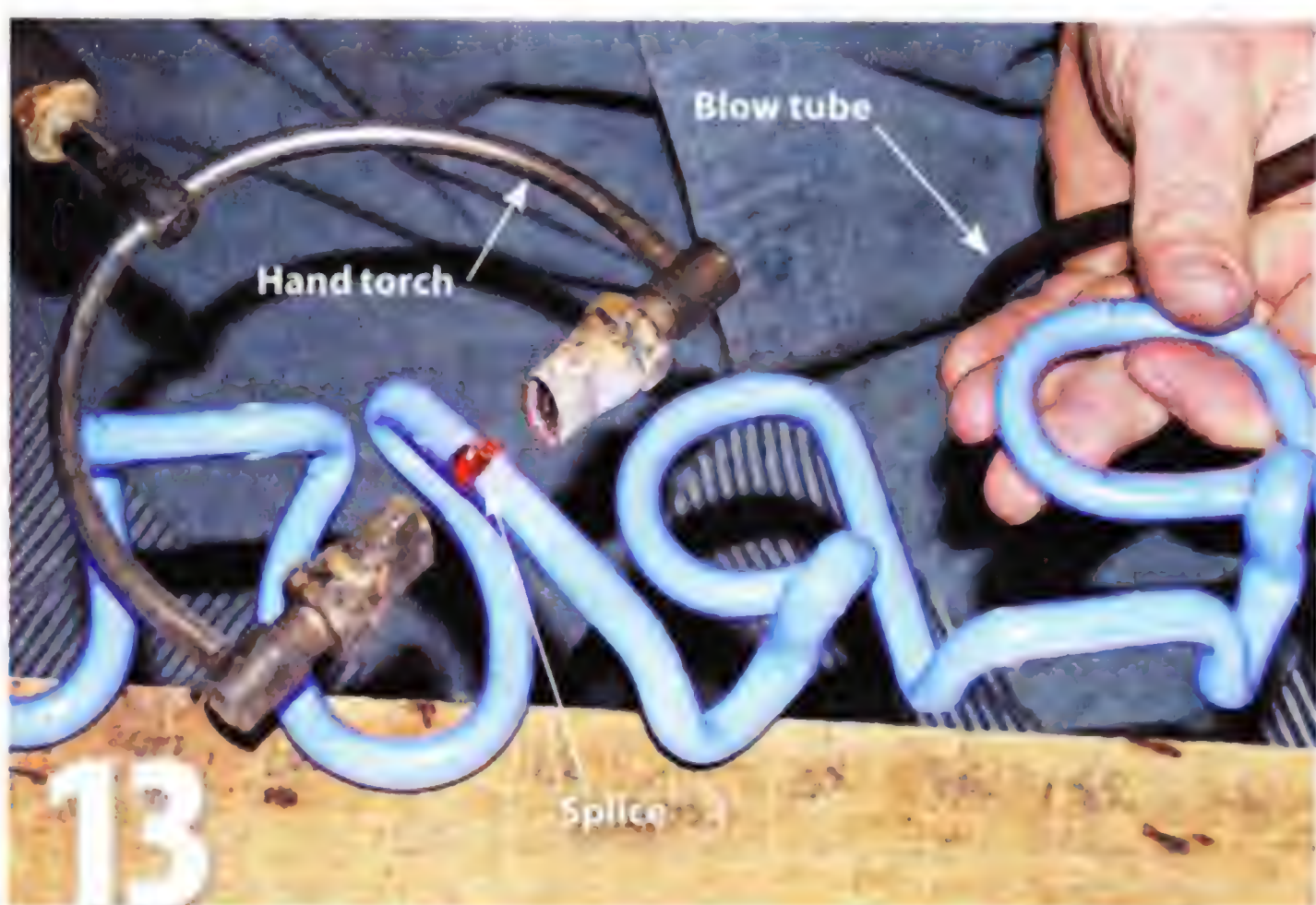
Nine trips to the ribbon burner and Charly is nearly finished with the first two letters of the second section. Now, he pencils a mark for a section to heat to begin forming the second R.



The last two letters require a second piece of 48"-long glass tubing. After 10 bends, Charly has the two letters formed and then plans placement for another electrode.

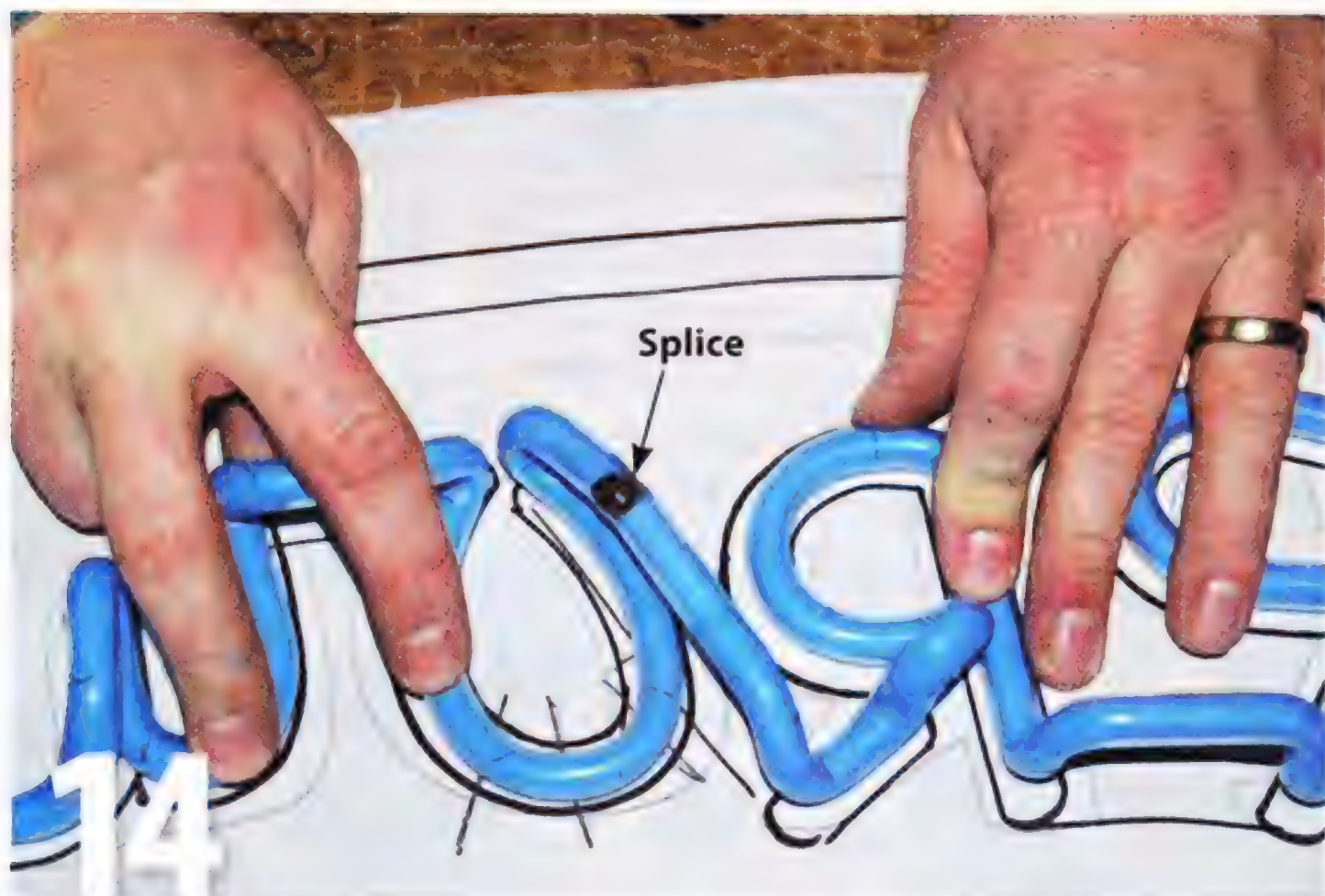


To splice the two sections of lettering, Charly uses an electric glass cutter for a clean, precise cut. He plans the splices to place them on what will become the back side of the lettering.



A hand torch heats up the two sections of glass-tubing union. Once again, the blow tube and cork prevent the interior of the glass tubing to be joined from closing.





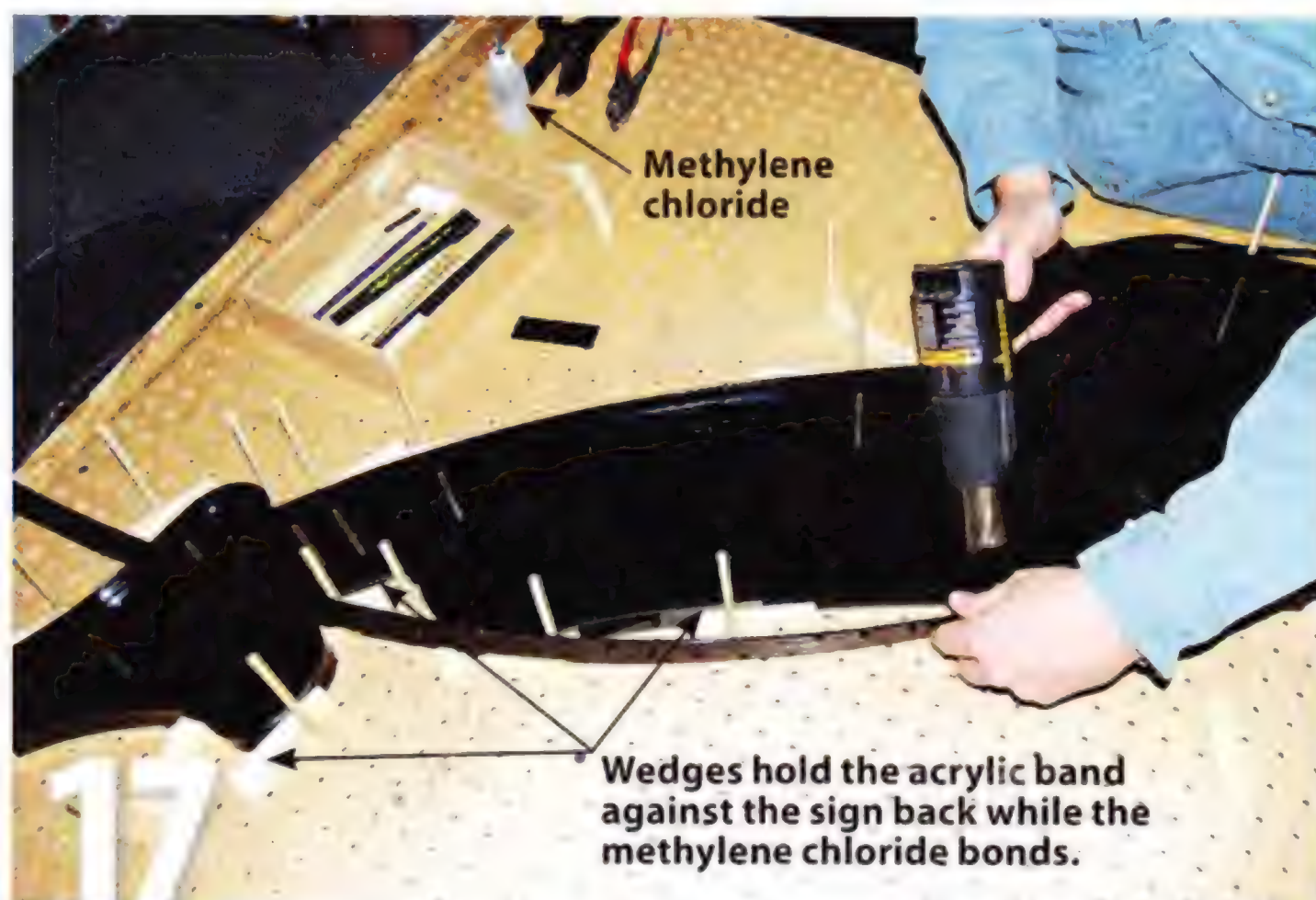
After joining the two sections of tubing, Charly checks the letters against the pattern one final time. He creates a full-size pattern like the one *above* for every sign passing through his shop.



After removing air from the glass and then pumping in argon, Charly burns-in the lettering to achieve full brightness. For more details about this step, see *page 21*.



Charly brushes on a fast-drying block-out paint, formulated for glass and high in pigments, to the tubing between neon letters. When illuminated, this creates the illusion of separate characters.




For a finished look, Charly edges the acrylic back with 1"-wide acrylic trim. He uses a heat gun to create tight bends. To weld the band to the acrylic, he flows on a thin bead of methylene chloride.



After drilling a  $\frac{1}{8}$ " hole in the acrylic, Charly attaches clear  $1\frac{3}{4}$ " tube supports to the sign. This design, using about 17' of tubing, gets two supports on the arrowhead, and 13 tube supports total.



With the neon tubing secured on the tube supports, Charly fits an electrode boot that joins an electrode and a specialty cord capable of handling high voltage that leads to the transformer. 






#### Nuts about cars and neon

Charly polished chrome and repainted a 1963 Chevrolet Impala front end, and then added his neon artwork.

## Make it yours

**O**f course, you can collect plenty of reproduction neon signs. And, it's a fun trip to restore old neon signs, too. But to really step it up for your retreat, consider what a custom neon sign can do. Charly Conn at Neon Specialties (neonspecialties.biz) has created a range of custom signs that have ended up in many man caves.

Take the sign *below right* he designed for Fred Lindsey, a city yo-yo champ in his youth. "You can't believe the compliments I get about this sign," Fred says. "Everyone loves it. And of course I can easily swap out yo-yos from my collection. My only regret is that I didn't have Charly make a bigger sign with more places to display my favorite yo-yos."

Before you work with a neon artist for a custom sign, Charly suggests you have a budget in mind. (Except for the car bodies, the signs here are in the \$100-\$400 range.) The quality of tubing, length of tubing, background material, and labor determine the final costs. 



#### Route 66 Improvements

A simple outline of neon upgrades an inexpensive 12"-wide reproduction sign.



#### A toasty glow

Charly tucked the transformer for this artwork inside the classic chrome-plated toaster.



#### Yo-yo champ's custom sign

Fred Lindsey, a 1959 city yo-yo champ, commissioned a 24"-wide neon sign to display three prized spinners from his collection of 4,000 yo-yos.





#### Game on!

A dedicated pool player ran the table with a custom sign that includes an 8-ball printed on vinyl.



#### Wise gift

Charly designed a 24"-wide sign in neon as a surprise birthday gift for a collector of owl items.

#### Two passions, one shop

A 24"-wide custom sign celebrates woodworking and college athletics in one guy's man cave.



#### Irish pub at home

Emerald neon tubing outlines a custom shamrock for a home bar. Reflective black acrylic behind the neon makes the lettering pop.



#### Amusement park still ticking

Terry Ball supplied a vintage clock to recreate a sign from a fondly remembered amusement park of his youth.

#### 1928 Ford Model A

Charly created a radiator of red neon fins for this custom wall-hanging. Stainless-steel dog dishes and clear acrylic enhance the reflections in the original headlight buckets.



#### 1930 Model A Ford

A classy addition of blue and white neon tubing fills a grill purchased on eBay for \$100.







## Cave crammed with color

There's nothing boxy or dark about this basement. And that seems to suit the boys just fine.

**W**hen Bruce Beguhn traveled for his job, he spent a lot of evening hours in bland motel rooms planning his dream retreat.

"I really didn't want anything boxy or plain," Bruce remembers, "so the first thing I designed was a diagonal wall to isolate the bathroom."

"Then I decided to get a little curvy with the bar top. Pretty soon everything I sketched was on a curve or diagonal."

Visitors can't miss the curves or the color scheme, which Bruce pulled from the contemporary rugs hanging in the

media area, as shown on *page 32*. "All totaled there are six colors plus black, Bruce says. "It's bright—no one should fall asleep here!"

To isolate the amplified movie and music sounds from the rest of the house, Bruce had the ceiling cavity in the media area sprayed with Icynene, an expanding insulation foam that dampens noise ([icynene.com](http://icynene.com)).

Before closing up the ceiling, he added 2"-diameter plastic conduit to house video cables, and 3/4"-diameter chases for the audio wiring.

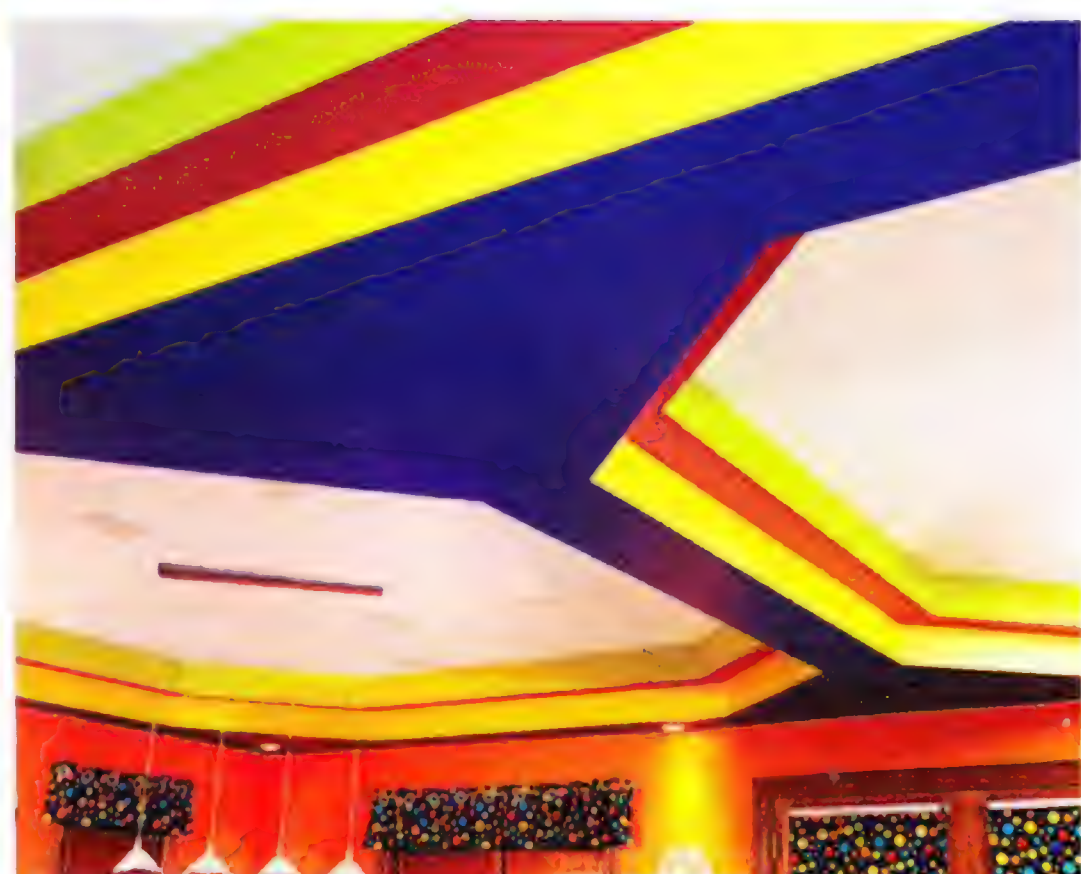
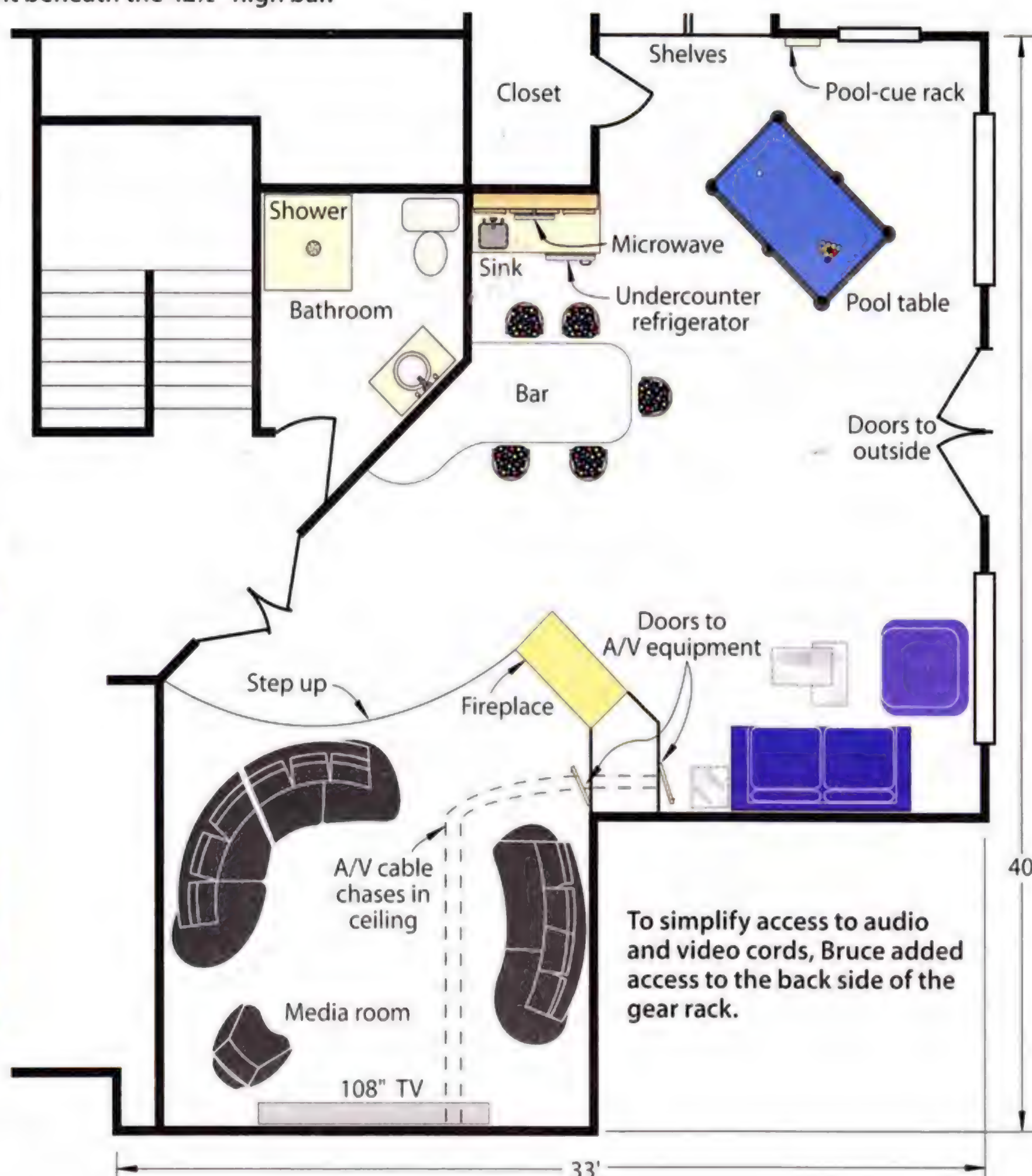
*continued on page 32*





Vince Sabotta, Larry Swanda, and Tim Cunningham gather around the 10'-long free-form bar topped with blue-ice granite. After building the base, Bruce covered it with stainless-steel laminate sheets. Blue rope lights provide soft light beneath the 42½"-high bar.

Homeowner Bruce Beguhn lines up a shot while his buddy Tim waits his turn. Bruce ordered the contemporary 7' table and cue rack from Billiards by Design.



The 9' ceiling allowed for a wedding-cake design—spiced up with four brilliant colors—to hide a major support beam. "I probably made 500 sketches of this before I was happy with the design," Bruce says. "I had the drywall installed, but my wife did all the painting."



## CAVE CRAMMED WITH COLOR




Contemporary area rugs used as wall art in the media area set the vibrant scheme for the entire basement. The room has a 108" screen with 5.1 surround sound; speakers are mounted in the wall at ear-height to the seated viewers.

*continued from page 30*

### A well-planned media room

Bruce stacked his media gear in a stub wall that butts up against the fireplace. (See the floor plan on *page 31*.) From the media room, he can tweak the volume, change DVDs, and make other routine adjustments. A second door on the back side of the wall provides easy access to switch cables or swap out equipment. "This really worked out well," Bruce says. "I never liked trying to balance equipment pulled halfway out of a cabinet and then blindly switching cords."

"The black front wall allows the big screen to serve as a focal point, whether it's the big game or just static art that quietly changes during parties. We hid the speaker covers by painting them to match the wall color." 

A natural-gas peninsula fireplace helps define areas in the basement. The exhaust snakes up through an adjoining wall.





Behind a figured-maple frame, a 5"-deep shadow box accommodates heirlooms and treasures.

# Shine some light on your collection

Shadow boxes make a great place to display a prized collection, such as this grouping of 11 antique molding planes, lovingly handed down from grandpa to grandson.

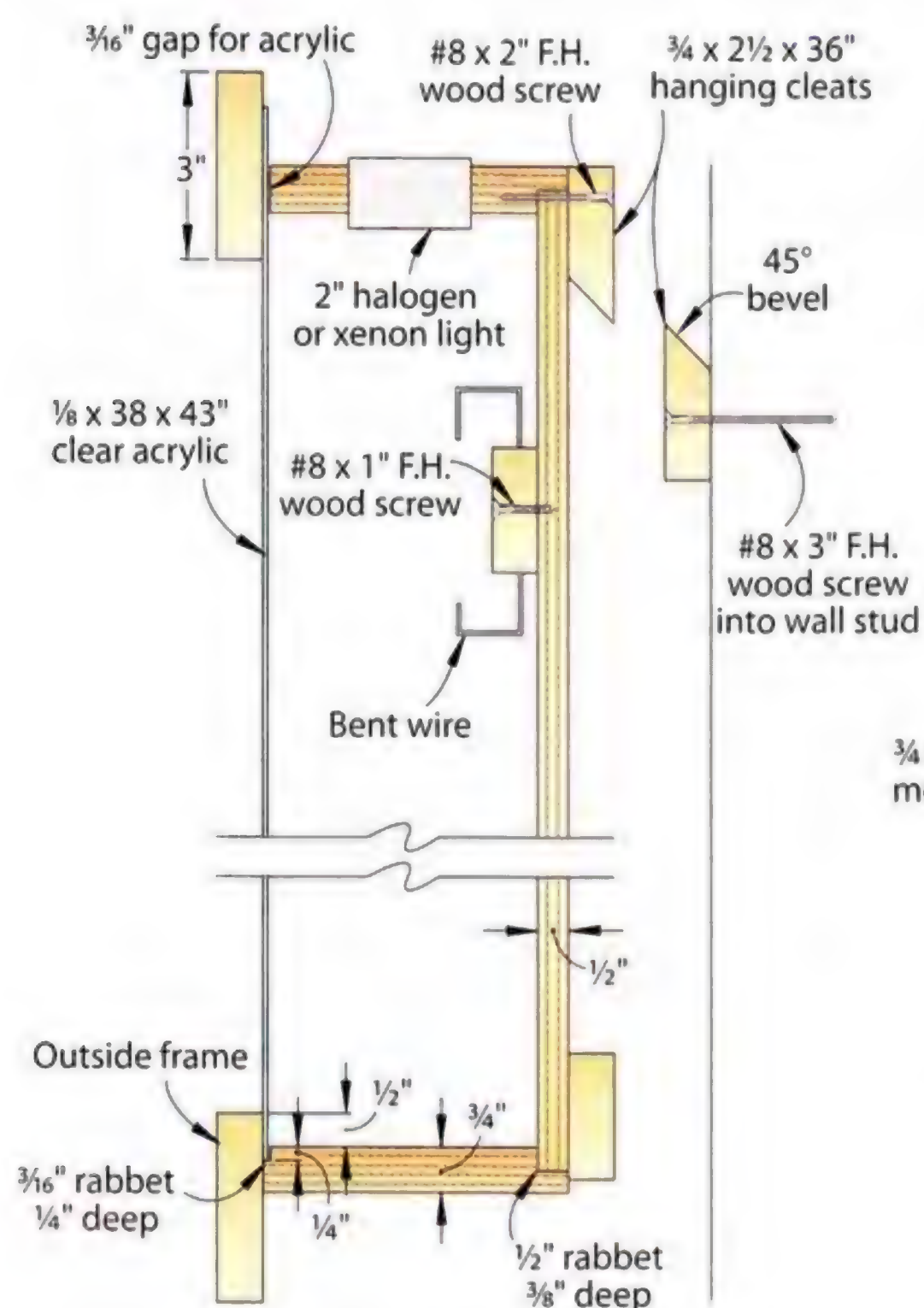
Unlike some shadow boxes that seal their contents inside, this display was designed for easy removal of the protective acrylic sheet. Behind the maple frame,  $\frac{3}{16}$ " rabbets in the side panels and a gap in the top panel make it easy to slide out the clear panel to update or dust the display.

A string of three 110V 2"-diameter halogen lights (purchased at Home Depot) illuminate and accent the plane contours.

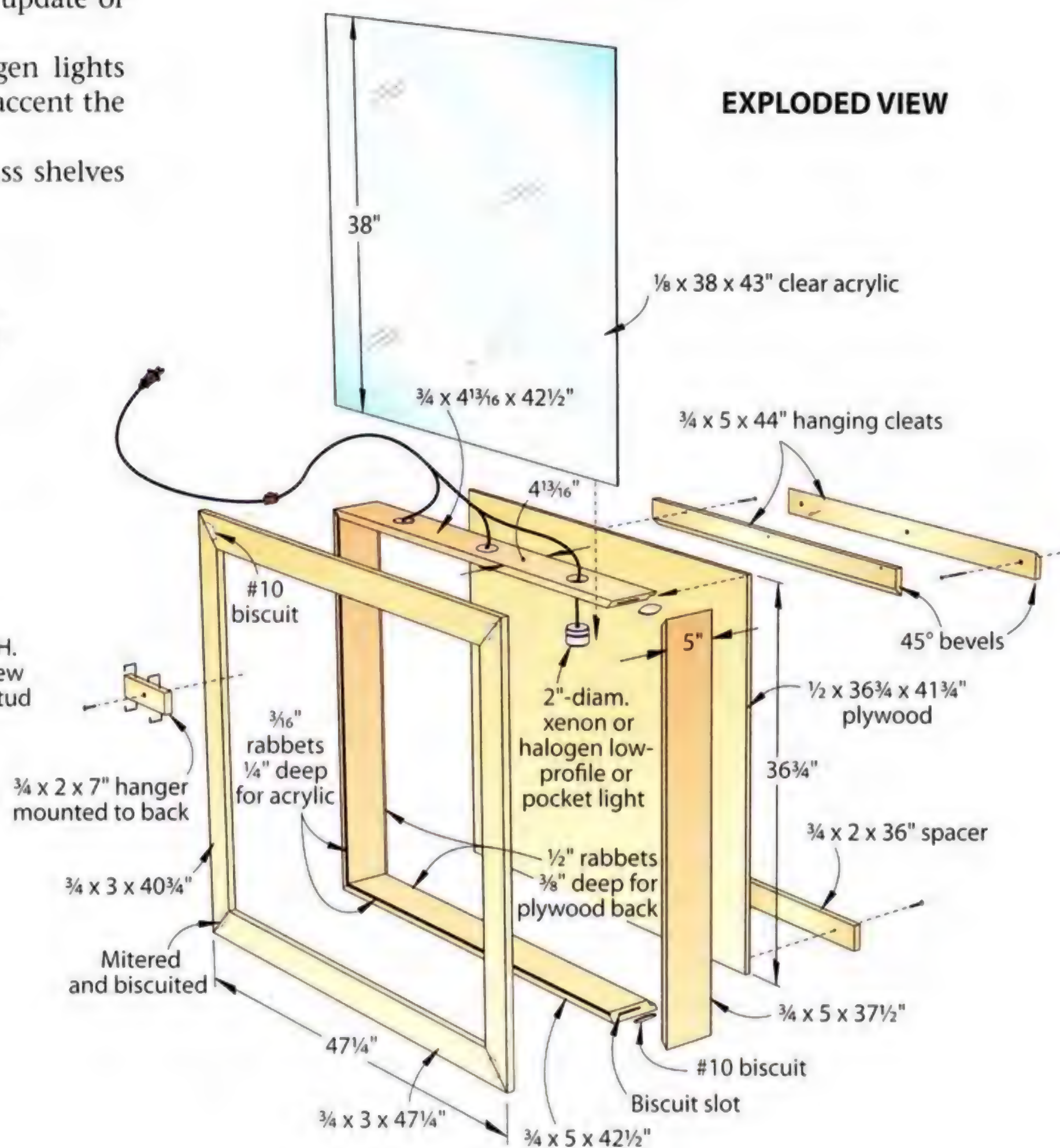
The cabinet also easily accommodates glass shelves for display of smaller collectibles.



Light from built-in low-profile halogen fixtures spills across these 18th- and 19th-century molding planes.



SIDE SECTION VIEW



EXPLODED VIEW





## A \$500 backyard bar

First an artist's studio, next a maintenance shed with a beer fridge in the corner. Then buddies helped convert it into the Shedbar—their own social club.

It's weird chemistry that sometimes draws together friends. Take the handful of guys invited to the Shedbar, a 15x15' former artist's studio in Richard Gooch's backyard. Today, few would pass up the opportunity to stop by when Gooch, as he's known to friends, puts out the call to visit.

The common thread joining these guys is that their wives once worked together at Clemson University. "We just got thrown together," Gooch remembers. "We were a little like a science project—let's see what happens if we stick these husbands in the same room!" Come to find out, a bunch of them actually liked each other. So much that they still get together every couple of weeks—even after the wives have moved on to other jobs.

A few years ago when Gooch and his wife, Jennifer, settled into their new house, they plunked a beer fridge into the corner of what he intended to be a renovated

*continued on page 36*



Clemson University Tiger paws adorn the doors to Richard Gooch's Shedbar in his backyard in Clemson, South Carolina. He's spent less than \$500 on the renovation. The Shedbar has been featured at [manlandsite.com](http://manlandsite.com).



Previous page: While gathered around the 40×40" converted kitchen table, friends toast another fun evening at the Shedbar. From left: Rob McDavid, Jennifer Gooch, Chad Thompson, Richard Gooch, Mike Utley, Stephen Rice, and Eric Muth. It's an eclectic mix of friends including a college professor, home builder, city employee, insurance agent, and graduate students.



Above: Gooch picked up neon and tin signs, like this Coors sign, for a few dollars from bar owners who were only too happy to clear out back rooms and basements. Three of the neon signs were broken and required attention by a repair shop. For more about neon signs, see page 20.

Left: A kitchen fridge moved from the Gooches' previous home sits in a corner of the Shedbar, plastered with bumper stickers and refrigerator magnets. The couch? One of the friends found it on a curb and thought it would look nice in the Shedbar. "Gooch is always tinkering with this place," says Mike Utley, a Clemson grad student. "Sometimes it's obscure—like the moving of a small sign from one location to another. But it's never the same place twice. The Shedbar is always a blast!"





## A \$500 BACKYARD BAR

Gooch hangs Atlantic Coast Conference banners and other memorabilia right against the open rafters and wall studs—no interior finishes. “It just takes me a couple of minutes to tack up something new,” he says. The lack of heat or air conditioning doesn’t bother Gooch’s friends.



Although he doesn’t collect beer caps himself (he collects beer labels), Gooch keeps caps on magnetic strips in the Shedbar for a friend who does.

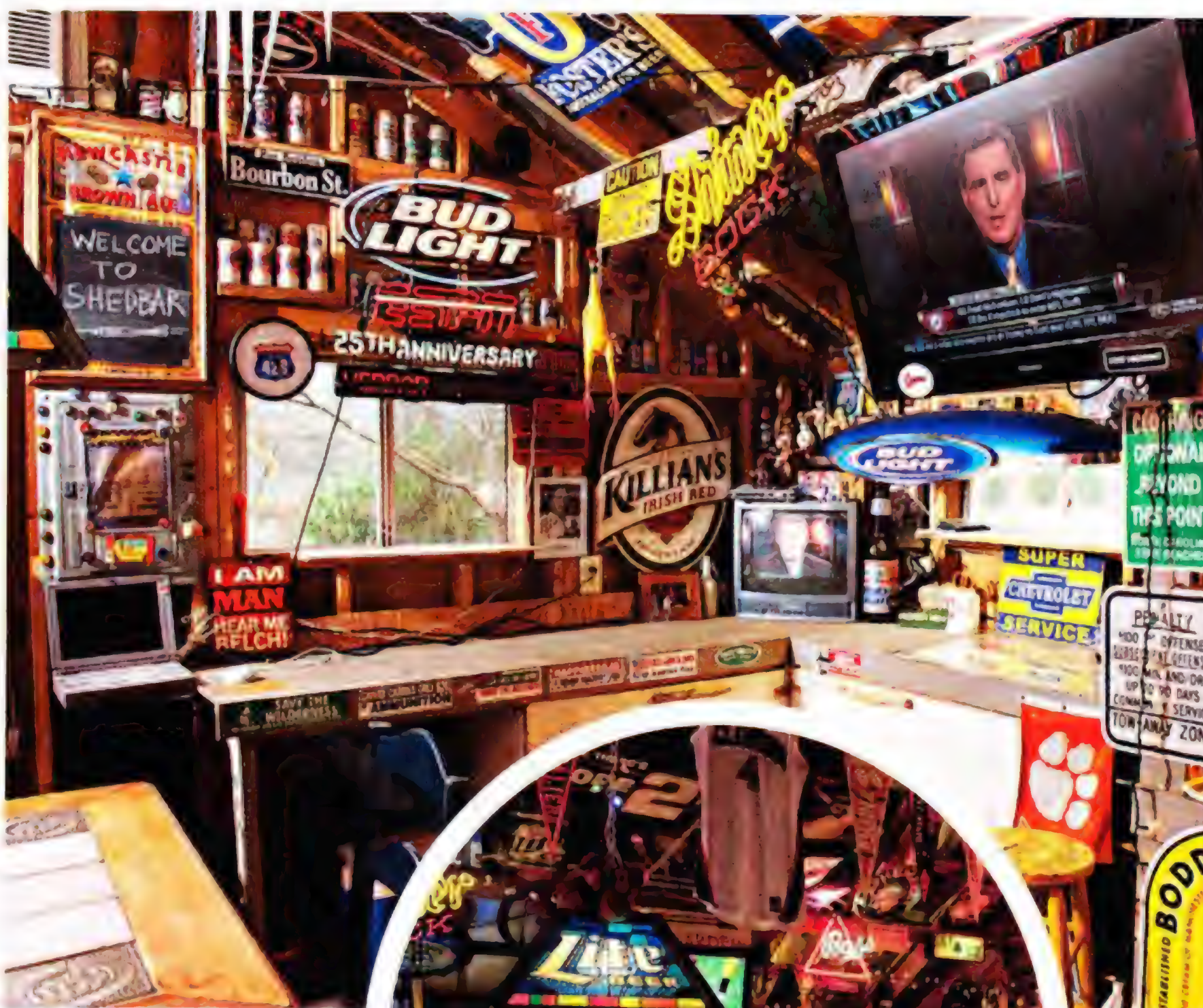
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maintenance shed. Before long, his buddies started helping decorate the place—“mostly stuff the wives wouldn’t allow in the house,” Gooch reports.

## What makes a great host

Friends agree that one of the Shedbar drawing points is the atmosphere Gooch creates. “Gooch sets up some ground rules in order to keep the conversation from getting too boring or too heated,” Mike Utley says. “What we do during the day doesn’t matter [Rule #1 below]. What does matter and what brings us together is our manly love for throwing back a few cold ones, shooting the breeze—usually discussing sports or Clemson athletics—and just leaving our problems at the door in favor of a few hours of good beer and good company.”

“We’re all married men,” explains Rob McDavid, “so unlike single guys, we often like to go where the women aren’t.”



## JUST A FEW RULES

Every great bar has a few rules, right? Here’s what works at the Shedbar:

1. No shop talk. (Don’t talk about work.)
2. No politics. (Most-violated rule.)
3. No whine/wine.\*
4. No Jimmy Buffett. (This is not a beach bar.)
5. My bar, my rules.\*\*
6. No drama.
7. Call “fives” to keep your stool if you leave the table for a moment.

\*except Franzia in a box.

\*\*Don’t get too crazy; wife, Jennifer, claims 50 percent ownership.



Before he invites friends over for another evening, Gooch takes down something from the Shedbar and replaces it with something new. Then it’s a guessing game for the buddies: What’s new tonight?

Photos: John Bolton Photography



Cases of longnecks have flowed through this 1990s-era refrigerator. For its loyal service, Scott freshened up its exterior with mementos of memorable brews.



More than 325 different bottle caps line the freezer door of Scott's upgraded beer refrigerator. Inexpensive  $\frac{3}{4}$ "-diameter magnets (\$8 for a box of 50) hold the beer caps in place.



## \$71 beer-fridge makeover

**W**ith about \$15 in spray paint, Scott transformed a 16-year-old almond-colored refrigerator into an eye-catching black beauty for displaying his collection of beer caps and beer coasters. Truth is, Scott has more invested in magnets—\$56 from a hobby store—than paint.

After he removed the plastic parts, Scott spent most of a Saturday afternoon sanding and prepping the refrigerator walls and doors. He sprayed on his first coat of paint late in the day, then applied a second coat Sunday morning.

"I let the paint dry for five days before sliding the fridge back into my man cave and putting the magnets on the front," Scott recalls. "It was the perfect Friday-after-work project—with a cold beer of course."

"The  $\frac{3}{4}$ "-diameter magnets do a great job of holding the caps in place, and I used hot glue to stick magnets to the back of my coasters. I collected the coasters from various beer bars and breweries I've visited on the West Coast."

"I can't even imagine how many beers this faithful fridge has kept cold over the years," Scott adds. "But it seems to keep on going." 🍺

### PAINTING TIPS

If you decide to repaint an appliance, you'll need to bring home two different cans of spray paint from the hardware store. Select an epoxy spray formulated for appliances for most of the work. For the handles, trim, and grille pick up a specialty paint for plastics. My only regret is that I didn't spread more newspapers around the refrigerator to keep the overspray off my garage floor.

—Scott, [manlandsite.com](http://manlandsite.com)







# Home bars: lots to decide

Take time planning your home bar—most guys do. The experts say there's no one correct order of planning; you just need to start somewhere. Cheers!

**W**hen he helps a customer plan a new bar, Joel Horn, manager of a Midwest retail store selling parlor games and home bars, figures on at least three visits with the homeowner. "There's a lot of thought put into setting up just the right home bar," Joel says. "Some people start with the stool and then plan the bar; others start with the TV location and plan backwards. It's never the same!"

Wherever you begin, here are decisions you'll eventually encounter to plan your perfect home bar.

**Select the Style and Height.** Decide if your patrons will stand or sit down. **Sit-down bars**, with a height of 42", make up about 80 percent of bars. If you yearn to mimic a favorite neighborhood saloon with a foot rail, go with a **stand-up bar** with a counter height of 46" (also called a continental height). This design often

includes a top with a contoured arm rail (forearm rest); see the top of *page 41* for an example.

Although not considered a bar in the classic sense, a **walk-up bar** functions like a serving table and looks like a stand-up bar pushed against the wall or a back bar. Walk-up bars provide great solutions in tight spaces or if you entertain only occasionally.

**Translate Bar Height to Stools.** A 30"-high bar stool (refers to seat height) is standard for a 42"-high sit-down bar. Building your bar slightly taller seems like an easy, inexpensive decision; however, David Challman, our expert at Primo Craft (a custom bar company), cautions you'll be blown away at the price of custom-height stools.

**Make Another Stool Decision.** If you're fussy about just how bar stools with logos or backs appear at your bar,

*Top:* For his man cave, Joe Bottieri built a 15'-long bar covered with diamond plate panels. He hired a metal shop to wrap a 33"-wide plywood bar top with brushed stainless steel.



*Above:* Joe added a simple strip of incandescent lights above the bar.

memory stools always return the seat to the same position. Standard swivel stools don't include this feature.

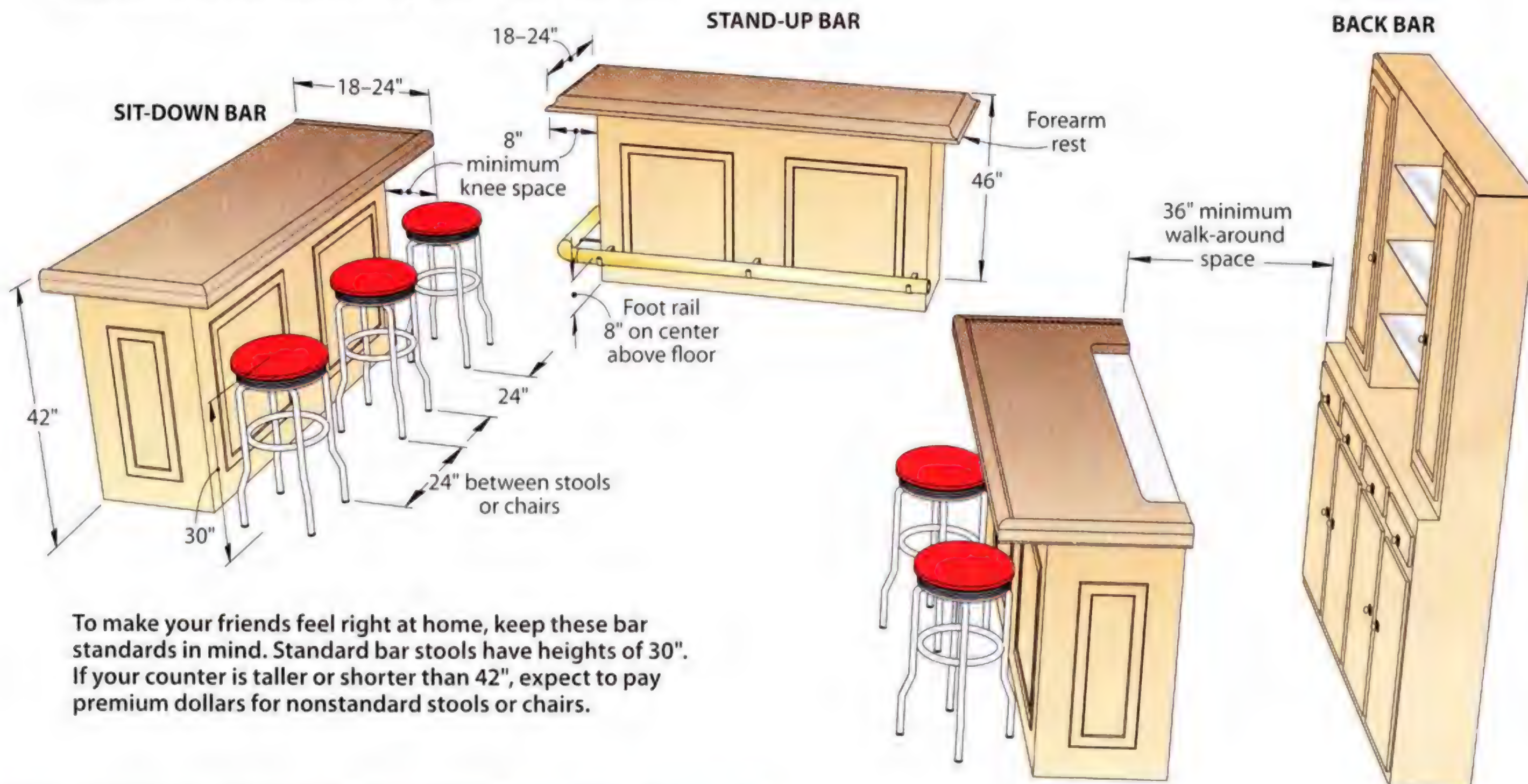
**Save Your Knees.** To prevent friends from banging their knees on the bar, the bar top must overhang the base by at least 8".

**Back Bar or Not.** If your family and friends drink mostly beer or wine, you may forgo a back bar, traditionally used for display and storage of liquor bottles.

*continued on page 40*



## Standard Dimensions Help You Draft Your Bar



To make your friends feel right at home, keep these bar standards in mind. Standard bar stools have heights of 30". If your counter is taller or shorter than 42", expect to pay premium dollars for nonstandard stools or chairs.



**Greaves**

Photos: Primo Craft

To avoid feeling cramped while serving behind the bar, plan at least 36" between the bar and back bar or bar and wall. This allows space to open cabinet doors and appliances.



**Ivy League**

Left and far left: "These two bars have similar 10x6' footprints," says David Challman of Primo Craft, a custom bar company, "but entirely different looks. Both work well in corners and have plenty of space for bottles and stemware. Some people prefer our Ivy League layout, which surrounds you on three sides with friends."

"With our Greaves bar," David continues, "your friends are lined up all in a row at the bar—perfect for some barkeepers who like to see everyone elbow to elbow." A brass foot rail wraps around this 10'-long oak bar. The wood bar top includes three walnut burl inserts. Wine glasses sparkle beneath low-voltage lights illuminating the back bar of both layouts.



## HOME BARS: LOTS TO DECIDE



Matt Mausser, behind the bar, entertains buddies at his basement bar. Matt owns a company that specializes in custom decorative concrete, like the 12'6" curved bar shown above. (More details about concrete on the next page.) Matt added low-voltage lights beneath the 3½"-thick bar top.

*continued from page 38*

One exception: A back bar may creep into your plans if you yearn to show off a collection of stemware or beer glasses. Some home bartenders prefer storage behind cabinet doors or in open shelves.

**Bartender Needs Elbow Room.** If you enjoy playing the role of host and bartender, provide ample room between your countertop and back bar. Plan on at least 36"—anything less makes it difficult to get appliances in and out of cabinets or fully open a dishwasher door.

**Let's Talk Appliances.** Decide if you want to outfit your bar with an under-counter refrigerator, dishwasher, wine chiller, or kegerator. If you include a dishwasher, remember to allow at least

22" walk-around space for the open door. And rough in an electrical supply for appliances—even if you can't include appliances in your initial budget.

**Gimme Water.** Locate your bar near the water supply and drain if you want to include a sink (called a wet bar) for mixing drinks, washing stemware and glasses, and serving meals. A wet bar could add \$2,000 to the build—more if the water supply and disposal lines need to be plumbed to your bar location.

**Media Alert.** If your bar plan includes a TV screen, will it mount behind the bar, or will your patrons turn around to see the screen?

**Choose Your Topping.** Today, you have a wide field of materials for the bar



Matt snagged the idea for his back bar from a Las Vegas bar. He anchored ¼" aircraft cable to the ceiling joists and beneath the counter; the cable passes through ½"-diameter holes in ¼×14×40" tempered glass shelves. Crimped washers support the shelves.



## 5 Bar-Top Options



### WOOD

If you crave the comfy warmth of a forearm rest, then point your design toward a wood bar top—you can't attain a concave surface with stone, stainless steel, or concrete. This resin-coated bar top includes a beer tapper and stainless-steel drip tray.



### WOOD INLAY

A poured-resin finish protects the walnut-burl inlays and provides a low-maintenance finish. To keep the deep shine, wax the bar top once or twice a year.



### STONE

Marble, granite, and faux stone draw plenty of fans to their easy-to-maintain surfaces. Jim Lawson (see page 45) likes the contrast of dark wood and light marble in his bar shown at left.



### BRUSHED STAINLESS STEEL

Brushed stainless steel requires little maintenance. A quick swipe with a damp cloth and then buffing with a dry towel restores its natural luster.



### CONCRETE

Concrete offers low maintenance and an extensive palette of colors and materials. Glass chips (Rolling Rock beer bottles) add a river of green to Matt Mausser's 3½"-thick bar top. Fiber-optic lights (1.5mm) provide glimmering accents; the power source rests beneath the bar.




Matt Mausser added a 9×13×11" ice bin to the right of his bar sink. "This model holds about a 20-pound bag of ice—plenty for a night with friends," Matt says.

top. Durable finishes have streamlined maintenance for wood, the traditional bar-top favorite. (In the Midwest, about 80 percent of homeowners select wood bars. On the coasts, metal and stone bar tops are leaders.)

Other popular options include plastic laminate; granite, marble, or faux stone; metal; and concrete. Some bar tops or bartender's countertops (the sink-height surface behind the bar top) include a built-in cutting board for slicing fruit.

**Deliver Cold Drinks.** If you don't include an ice maker at your bar, where will you store ice? An ice bucket on the counter or ice chest on the floor may be fine for many households. Incorporating space for a stainless-steel ice bin (see photo above) provides another option.

**Shed Some Light.** Don't allow your friends to sit in the dark at your bar. Popular illumination choices include pendant and track lights. 

## Resources

**Stock and custom home bars.** Primo Craft (800-651-9351; primocraft.com).

**Bar moldings and foot rails, stainless-steel dry sinks, wine-glass moldings and stemware holders.** Rockler (800-279-4441; rockler.com).

**Decorative concrete and fiber-optic counter-tops.** Speck USA (515-285-4649; speckusa.com).

Illustrations: Roxanne LeMoine



When it comes to bars and Coca-Cola, "You can't beat the real thing." See how a Coke collector incorporated a 1920s saloon into a showpiece.



## In this bar, new meets

**W**hat are the odds of finding a complete vintage bar for your home? About zero, by most accounts. Coca-Cola memorabilia collectors Dennis and Donna Bardin didn't let low odds get in the way of re-creating a period piece of their dreams. It just took some patience, research, and one lucky find at a flea market.

In the Bardins' Texas home, the Coca-Cola bar—the centerpiece of their 25×25' game room—traces its roots to Milwaukee. The bottom portion of the back bar was all that remained from a classic saloon bar dating to the 1920s. The rest of the custom-built 12×10' bar blends seamlessly with the maple original.

"We must have looked at nearly 100 old soda-fountain pictures and designs," Dennis recalls, "and did a lot of online research for about 24 months. A friend who does custom cabinetry finished out our design and pulled it all together. Our friends think the entire front and back bar are 100 percent vintage as it all flows together—down to the stained glass! Most people have no idea that about three-quarters of this is new.

"Our friend Dale built the top of the back bar [three pieces] and the front bar [three pieces] to match the original saloon section. Donna made the reproduction stained glass for the doors and top, and we installed some accent lighting and a sink."





*Note: Dennis serves as president of the Coca-Cola Collectors Club, a national organization. For more information about the group, see [cocacolaclub.org](http://cocacolaclub.org).*

**Left:** An in-progress photo shows the new top of the 12'-long back bar resting on the original 1920s maple carcass.

**Below left and below right:** For the front of the bar, contractors salvaged raised panels from doors found at flea markets and antiques stores, then blended the finish to match the back bar.



classic

"We roughed in ample electrical outlets—especially near the ceiling—for hanging electric and neon signs up high to take advantage of all the wall space in this first-floor room with a 12' ceiling.

"This is a great working bar and the center of great times in our game room for entertaining friends and family, listening to music from our 1953 Seeburg jukebox, or watching all the games on the flat screen that's hung up in the corner. Too much fun!

"We also get a lot of great comments on the scored concrete floor, which gives the feel of an old bar or soda-fountain area and also helps keep it nice and cool in the summer!"



**Above:** Reproduction stained glass (Donna's handiwork) embellishes the top of the back bar.



**Left:** The Bardins carefully restored the carved detail and the wood surrounding the original manufacturer's label.





A Calgary Flames fan puts the biscuit in the basket with his salute to hockey.



A mountain of salvaged hockey sticks surrounds Jeremy Parker in his basement cave.

Matt and Chera Yorke Photography

## A bar built stick by stick

A trip into Jeremy Parker's basement man cave feels like walking into a mini hockey shrine. And nothing draws more conversation than his jaw-dropping stick-skinned bar.

Jeremy spent a year scouring local hockey haunts for shattered sticks. "I used 283 hockey sticks, but getting them wasn't as easy as I thought," he says. "I remember playing hockey as a kid and seeing garbage bins full of broken sticks at the rink! Today, lots of players have switched to composite and aluminum sticks that don't break as easily."

He was persistent about his dream bar. "I did buy a few sticks," Jeremy confesses, "but that was getting expensive fast. I went to local rinks looking for broken sticks, asked friends to bring me sticks they broke, and begged them to pick up broken ones at the rink. I even asked Zamboni drivers to keep their eyes open for me."


When Jeremy finally collected enough sticks for the 42"-high bar, he relied on construction adhesive to adhere the timber to a wood frame.

Jeremy continued the hockey theme on his bar top, purchasing official pucks for each of the National Hockey League's 30 teams at a sporting-goods store. With

a holesaw and drill, he bored 3"-diameter holes into the 4"-wide birch planks, dropped in the pucks, then sealed the top with a self-leveling pour-on epoxy finish. (Crystal Sheen Polymer Finish is one brand.) Finally, he added authentic Vaughn hockey padding around the top.

"This whole man cave," Jeremy says, "started with a couple of cans of official

Calgary Red paint from Home Depot and just grew from there. I don't know if it will ever be finished. Every day I think of new ideas that I would like to do.

"I am not a big handyman, so my man cave requires lots and lots of trial and error. Time, patience, and planning seem to be what works for me. My next project will be to frame some jerseys." 

Official NHL pucks from 30 teams ring Jeremy's 60x36" bar top.








Jim Lawson likes to take good care of friends who drop by his basement bar.

# 'I'm in heaven behind a bar'

Whether he's hosting a Green Bay Packers party or his running buddies' book club, you'll find this former college barkeep at his station. And lovin' it.

**J**im Lawson learned a thing or two in college—and not all in the classroom. "I really enjoyed tending bar for four years," Jim recalls. "People are always happy at a bar! I learned I really liked being behind the counter and taking care of customers."

"So when I started planning the basement for our new home, I knew I wanted a comfortable place for me to spend the entire evening taking care of friends. I made sure there was plenty of space behind the bar to make drinks, serve food, and entertain."

Jim selected dark cabinets and four leather swivel chairs—just a tick nicer than his college days. A nearby refrigerator chills a dozen or more varieties of domestic and imported bottled beer; around the corner a 36"D x 42"W x 84"H closet (size of a linen closet) holds a small reserve of favorite wines. 



Jim stores all of his sparkling stemware behind frosted-glass doors. "I think open wine-glass racks look cool, but I didn't want to fuss with cleaning glasses before pouring a drink," Jim says.



For his 9'-long bar top, Jim chose a light-colored marble. "It's a lot easier to keep clean than the college bar where I worked," Jim adds.



A Frontgate wine opener holds a place of honor at the end of the bar.





## Real-thing restoration

Relive a slice of simpler days when you could walk up to a cooler, lift the lid, and grab an ice-cold soda. Just don't forget to pay before you head out the door! Here's how one of those classic coolers was restored.

**B**ack in the day, a merchant could load up this 1940s-era cooler with up to 140 green 6½-ounce bottles of Coca-Cola and then let a water bath keep the contents "ice cold."

Allen Darrow was looking for an old-fashioned vending machine for his game room when he stumbled across this Westinghouse L25 Master Cooler on Craig's List. "I was lucky to locate a machine in good condition for \$750," Allen says, "but that's just part of the story. I wanted the machine restored to the original appearance, and I found just the guy to do it."

Allen turned to Red Rock Restorations ([redrockrestorations.com](http://redrockrestorations.com)), where Shawn Morgan has given new life to machines like this. Shawn, who honed his skills



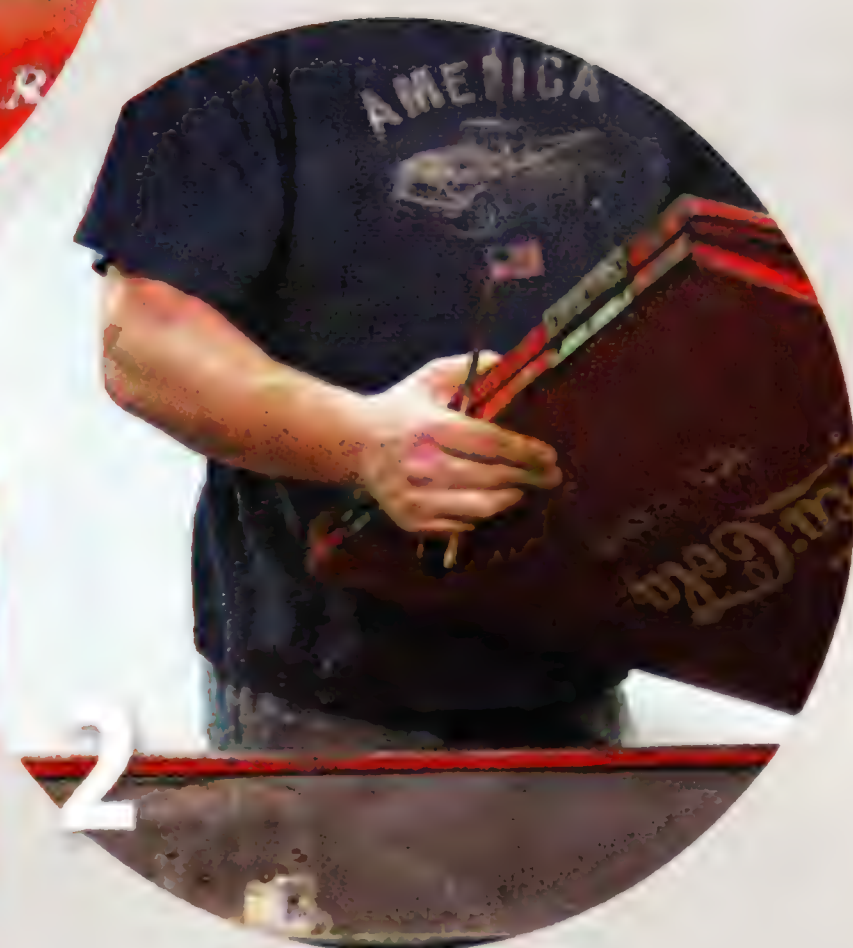
over 20 years in the auto-body business, returned the exterior to its original looks. He then converted the water-bath interior to an air-cooled system.

### Loaded with lettering

Hand-painting the two coats of white lettering enamel was Shawn's biggest challenge. "I haven't seen a vintage

*continued on page 48*





## Tearing down the beast

Shawn Morgan needed just a few hours to disassemble the cooler. And in the process, he learned a lot about this project, as shown in these photos.

**1** When Shawn removed the original hinges, he discovered chrome-plated brass. **2** The inside of the hinged lid includes beautifully detailed logos, matching the cabinet. **3** The cap holder shows the most wear. **4** After removing the bottle

opener, he discovers it was cracked; he ordered a replica replacement. **5** The lid gaskets no longer seal—more parts to order. **6** The water cooler—old technology—requires an upgrade. Shawn ordered a new air-chilling system. He and Allen confer later about a coating to hide dings in the stainless-steel interior. **7** The ¼-hp condenser slides out easily but has no salvage value.



continued from page 46

Coke machine that required more hand lettering," he says. "Even the back of this machine and both sides of the lid have  $\frac{1}{8}$ " embossed panels.

"It takes a pretty steady hand to pull this off. I limited myself to 2 hours of lettering and spread it out over 5 nights to make sure I painted crisp letters."



## Refreshing a cooler

Over a 3-week period, Shawn transformed the 35½"H x 41¾"W x 25¼" Coke cooler in his shop.

**1** Shawn sandblasted the cabinet, exposing the bare metal of the raised letters and logos.

**2** With an auto-body hammer and fender dolly, Shawn pounds out the distorted corners of the cooler lid.

**3** Next, he applies auto-body filler to level out the dings and scrapes. "There really wasn't anything major," Shawn recalls, "but the lid was the hardest to repair. It's made from such thin metal, I had no way to pop out the surface like on a car."

**4** After the filler dries for 15–30 minutes, Shawn sands the blemishes smooth with 80- and then 180-grit sandpaper.

**5** Shawn applies two coats of a two-part urethane primer with a high-volume, low-pressure (HVLP) sprayer.

**6** After the primer dries overnight, Shawn shoots the surface with the first of four coats of red paint, waiting 15–20 minutes between coats.



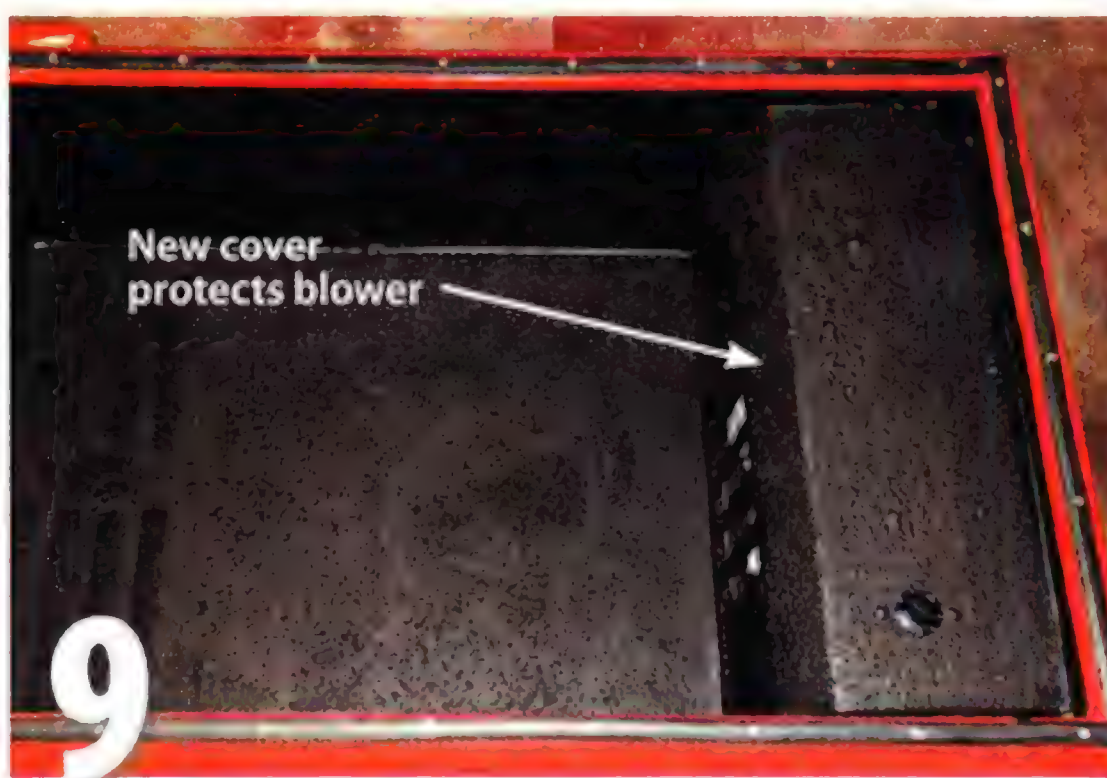




**7** With three sizes of artist's brushes, Shawn outlines and fills the raised logos.



**8** The restoration includes installing a new gasket around the lid to keep the cold air in, meaning less work for the new cooling equipment.



**9** Shawn coated the well-used stainless-steel liner with a material used for truck-bed liners (polyurea with rubber granules). A new cover protects the air circulator in the chest.



**10** After all the paint cured, Shawn uses a 7"-diameter buffer and 3M's Perfect-It II rubbing compound to polish the case to a mirrorlike finish.



**11** The original cast-aluminum handles sparkle after being reattached to the lid. To bring the handles to life, he buffed them with red-rouge compound.



**12** Beneath the chest, a new condenser and motor easily fit in the space formerly occupied by the 1940s water-chilling system.



**13** Before rehanging the cap holder, Shawn screws on a replica bottle opener.





A built-in fridge (about \$350 on sale at Home Depot) holds about four cases of beer.

## 'Breweriana' in the basement

The collection honors beer and brewery art. But the drywall detail sets the tone for this basement hideaway.

**M**any DIYers will run, not walk, from hanging and finishing drywall, perfectly happy to hire out the intalling and mudding work. But Bill Krier isn't most people.

In fact, Bill enjoys working with drywall so much that he added details at every opportunity—walls, archways, and built-in shelves—to dress up his "breweriana" basement retreat.

Before he was finished, Bill worked his way through 77 sticks of 10'-long outside drywall corner bead. "Quite a few sticks were the flexible variety to form the arches," Bill recalls. "But it was worth it!

The arches are one of the first details my buddies comment on when they step into this space for the first time.

"I like drywall because it's a forgiving medium. If you don't like the way it turns out, just scrap your first effort and redo—the raw materials are cheap.

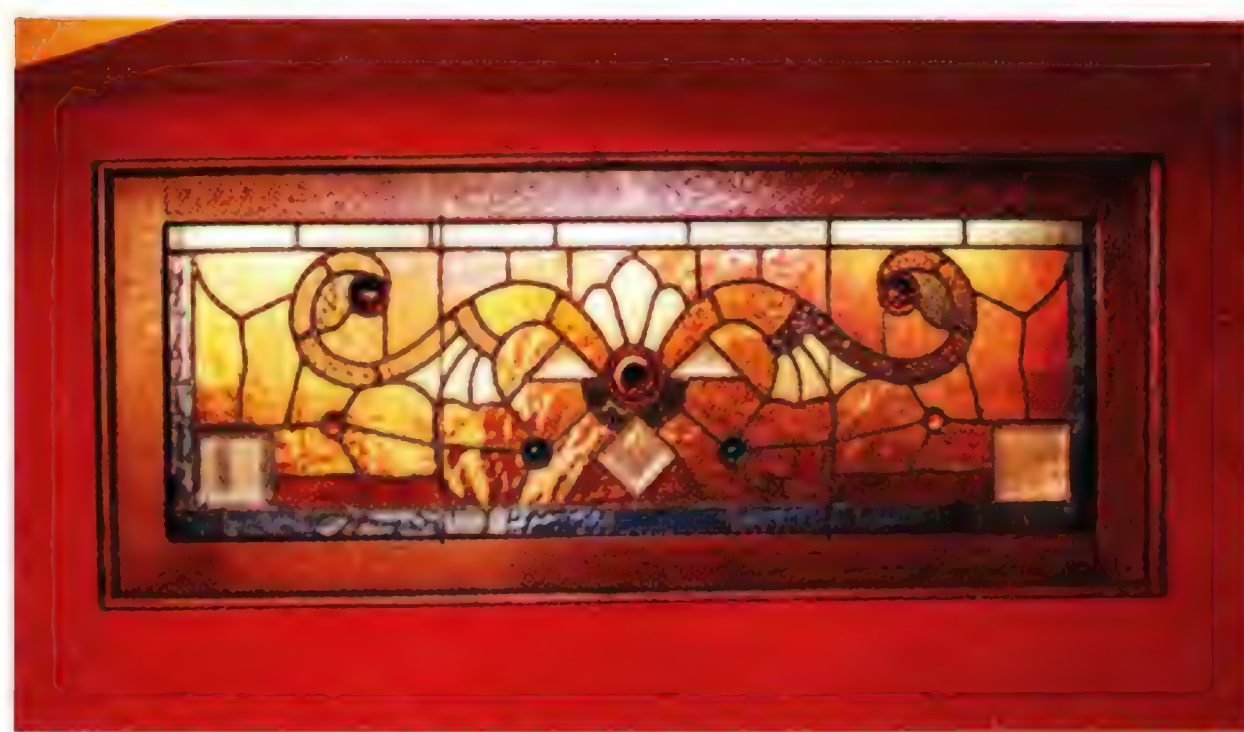
"But probably the best investment I made in the basement was the gas stove. For super-convenient operation, I put it on a thermostat. Now our otherwise-chilly basement gets so cozy that this room has become popular with my wife and daughters for movie nights. This is now the go-to room."





**Above:** Friends have plenty of room to operate around a classic Foosball table near the bar area. The 14' curved archway, formed from drywall, hides a 4½x12" wood support beam.

**Right:** An alcove beneath a first-floor fireplace provides an ideal location for a gas-burning stove. Bill installed the real stone himself (Natural Stone Veneers International; [nsvi.com](http://nsvi.com)) but hired a pro to vent the stove directly outdoors. Affordable acoustic tiles offer easy access to overhead pipes and wires and improve the acoustics of the media room.



To add nostalgia to the room, Bill installed a 54x21" stained-glass panel that he purchased at an antiques store. Standard track lighting and a diffuser panel (sold for fluorescent fixtures) provides backlighting from the adjoining storage room.



Hearth curvature matches drywall arches



## "BREWERIANA" IN THE BASEMENT



Simple shelf brackets (Home Depot; about \$8/pr.) support 24x8" shelves of 1/4" tempered glass. Hollow-wall fasteners secure the brackets to the wall.



A Blue Moon neon sign (eBay purchase; about \$200) sets the tone for Bill's 14'-long walk-up bar. Bill purchased the base cabinets and wall units on sale at Home Depot.

Instead of installing a granite countertop for about \$1,100, Bill purchased 12x12" black-granite tiles (about \$150). "Around the backsplash, I installed ceramic tiles sold for bathrooms," Bill says. "They're inexpensive and easy to apply with mastic."

### Tile floor on a budget

One of Bill's friends—a flooring installer—recommended 12x12" porcelain floor tiles (about \$1 apiece) for the basement retreat. "Spills clean up easily," Bill says. "After a heavy downpour, I cleaned up with no water damage to the tile."

"To ensure that cracks in my floor didn't transfer to the tiles," Bill says, "my buddy suggested I roll on a rubber coating prior to installing the tiles. So far, no cracks!"

### COASTER COLLECTING

"Classic advertising art appeals to me," Bill says, "but I focus on collecting pieces from Wisconsin breweries to keep the collection manageable. Coasters are fun and inexpensive. I don't think I've ever paid more than \$4 for one." For now, Bill displays his coasters along the edges of shelves. Learn more about breweriana from the Brewery Collectibles Club of America ([bccca.com](http://bccca.com)).







Bill concealed a metal post and support beam beneath this detail. "I have about 15 hours in these mini arches," Bill estimates.

"He also suggested renting a commercial-grade diamond saw—about \$55 a day. I'm glad I listened to him. The overhead-blade saw produced clean cuts and was definitely faster and a lot less messy than the tablesaw-type saws I've borrowed from friends.

"Of course tile is cold in the winter. But an oriental rug placed on top of a thick carpet pad near our couches works well. The kids lay on the floor all the time and are perfectly comfortable."

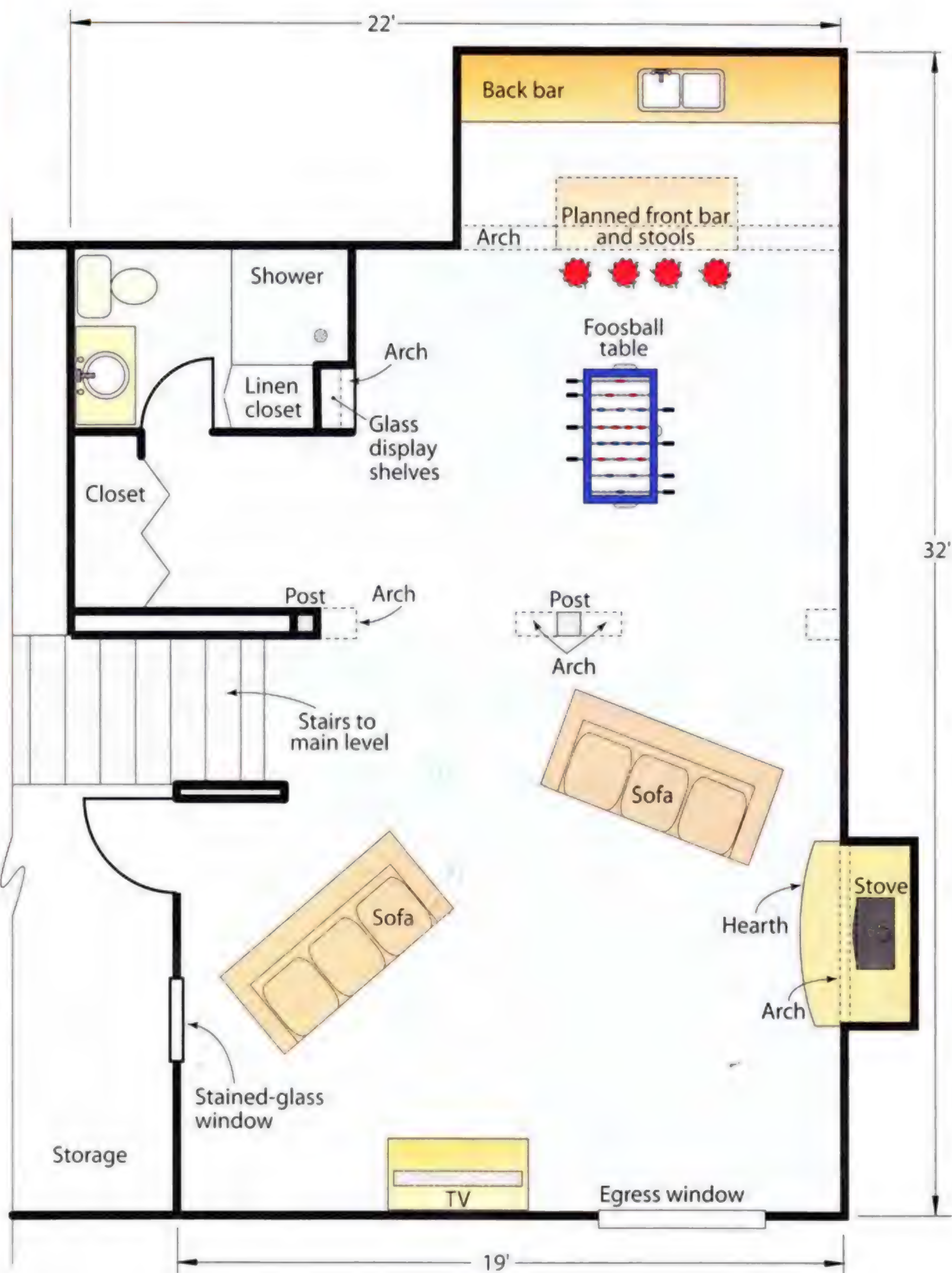
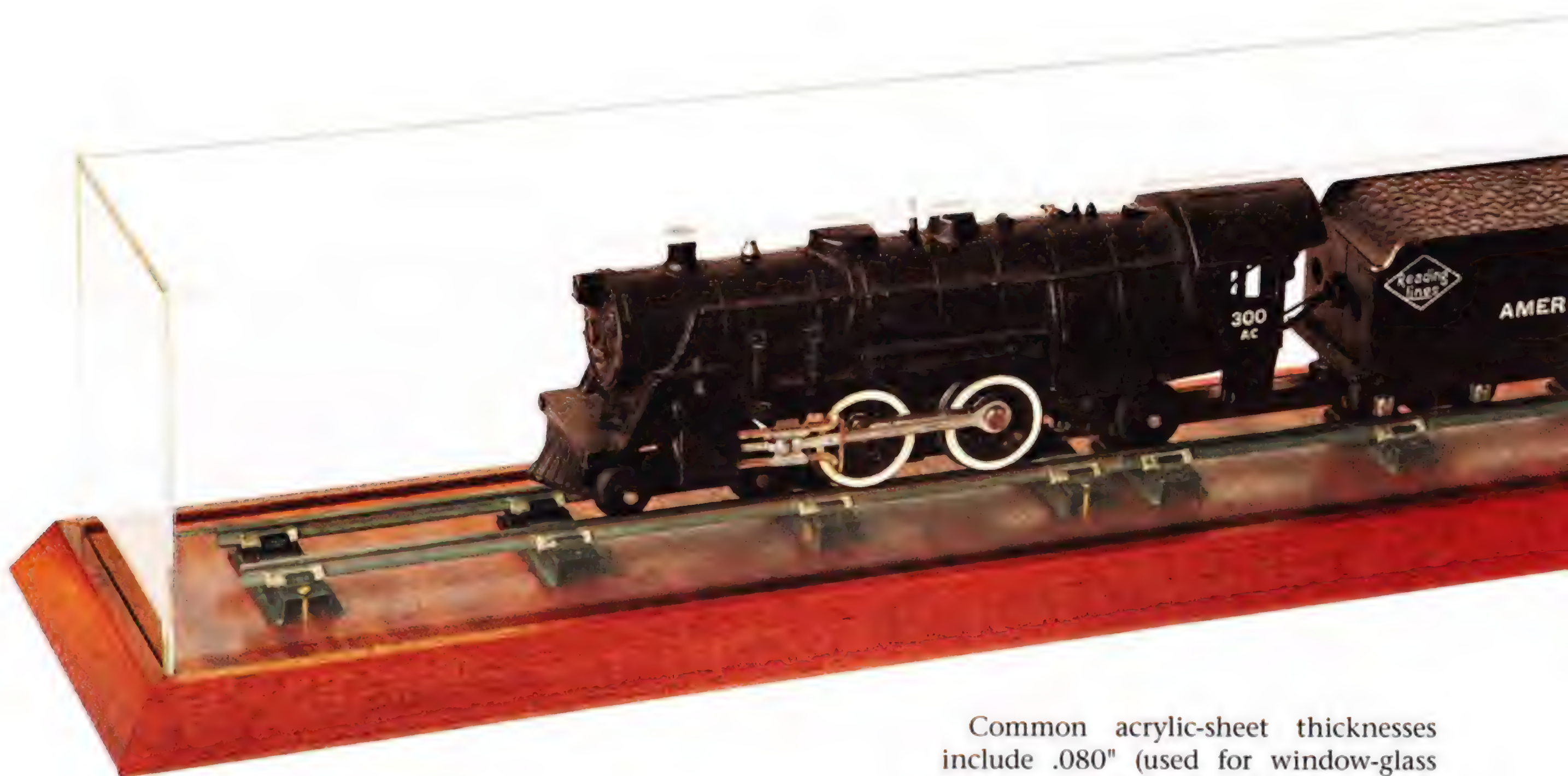


Illustration: Roxanne LeMoine







# Craft an acrylic case for collectibles

Dust off your favorite collectibles and display them in clear view inside custom acrylic cases.

**D**ig through your closets and boxes in the basement. It's time to go on a mining expedition to display collectibles, sports memorabilia, and vacation mementos in your own special part of the house. But don't just park them on a shelf or desktop. Set them apart from the ordinary (and avoid the downside of dusting) by making custom acrylic display cases. Here's how.

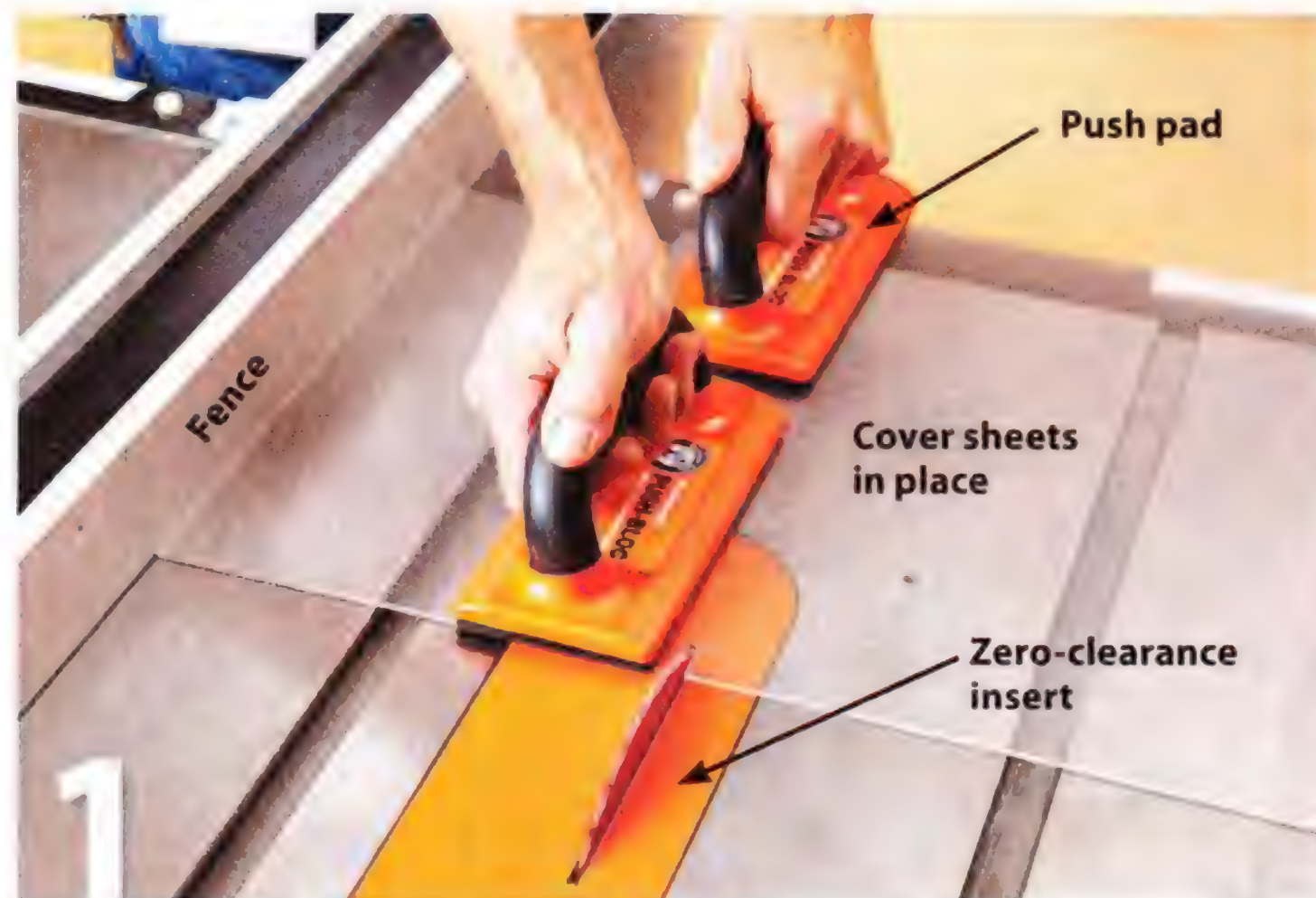
## Gather your materials

You can buy acrylic sheet at home centers or from a plastics distributor. Acrylic sheet from a home center usually comes with protective plastic-film cover sheets. The plastic film is easy to remove, but also tends to peel off during machining, and falls off during extended storage. Most plastics distributors stock acrylic sheet with paper cover sheets. The paper cover adheres to the acrylic sheet until you intentionally remove it, providing

protection during machining, but it tends to permanently fuse to the acrylic during extended storage. Either way, it is best to buy only what you need and machine it right away.

Common acrylic-sheet thicknesses include .080" (used for window-glass replacement), 1/10", 1/8", and 1/4". Use .080"-thick acrylic for covers and cases where the short dimensions of the sides, ends, and top are less than 12". (We used .080"-thick acrylic for the case shown.) For cases with the short dimensions of the sides, ends, and top between 12" and 18", use 1/10"- or 1/8"-thick acrylic. For cases over 18", use 1/4"-thick acrylic.

Besides the acrylic sheet, you'll also need acrylic plastic solvent cement, a needle applicator (see **Photo 3**), Novus 2 fine scratch remover, masking tape, and a resilient pad such as a router mat for your workbench. Find cement, an applicator, and scratch remover at a plastics distributor, or online. (See **Sources** on page 57.) You'll also need scrap wood for the assembly spacers.



Raise the blade so the tooth gullets (spaces between the carbide teeth) clear the surface of the workpiece. Hold the acrylic sheet flat on the saw table and flush against the fence, with push pads positioned close to the cutline.





This 1950 American Flyer 300 AC Atlantic locomotive bears the badge of the Reading Lines, the railroad made famous by the Monopoly board game. Base and acrylic cover: 5×33½×5½".

## Size your parts

Allowing a comfortable amount of clearance around the display item (at least 1" on the train *above*), determine the inside dimensions of the cover. Make the two ends ¼" taller than the inside dimension to account for the base and add ⅛" to both height and width for jointing. For the two sides, add ¼" plus ⅛" to the height and twice the acrylic thickness, then add another ¼" to the width for flush trimming. For the top, add twice the acrylic thickness plus ¼" for flush trimming to both the width and length.

## Cut and joint

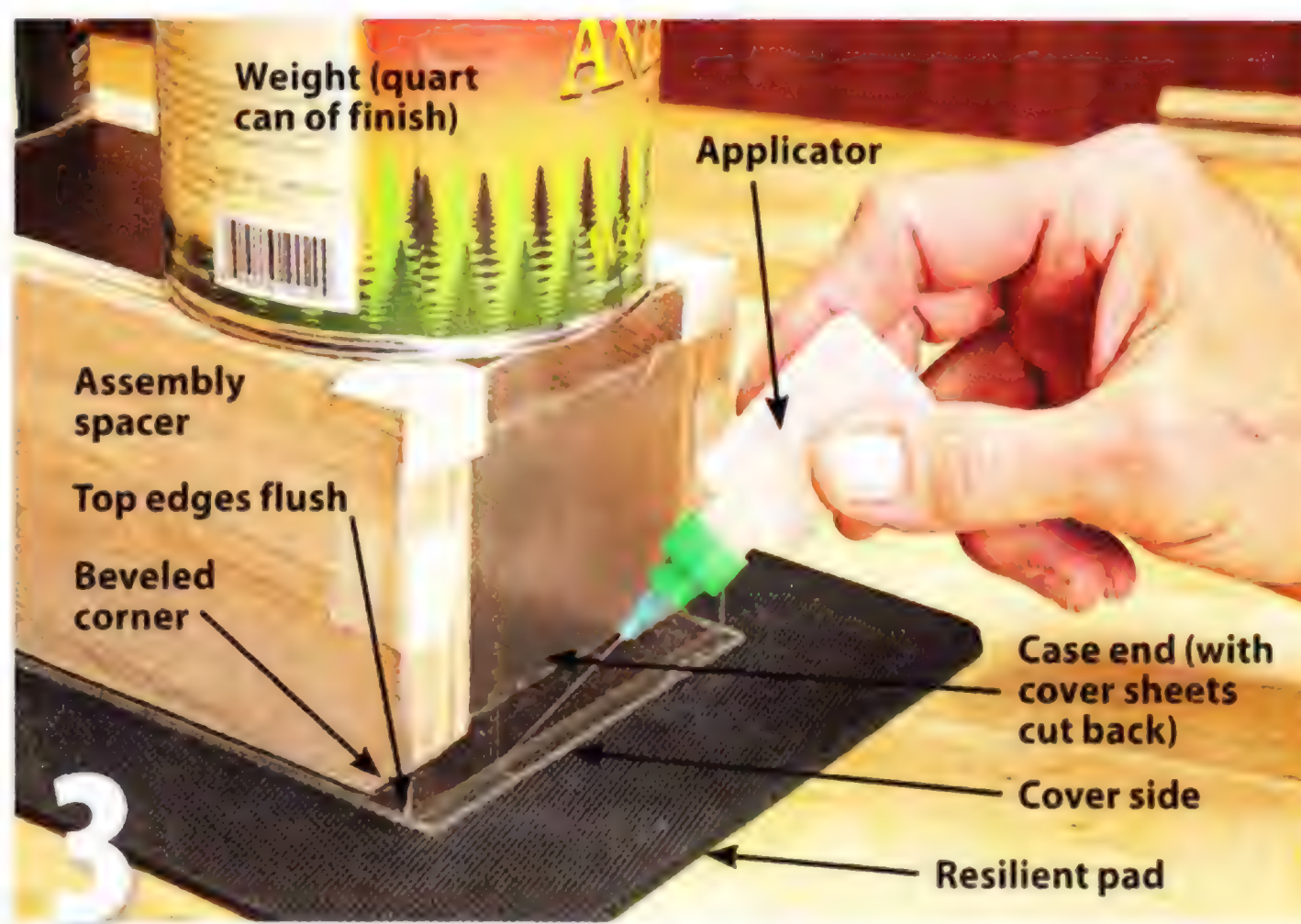
For the best cut quality, outfit your table-saw with a zero-clearance insert, and install a sharp 60- or 80-tooth carbide-tip blade. If you plan to do a lot of plastic fabrication, consider purchasing an 80-tooth TC/F (triple chip/flat) blade. You'll also need a jointer or a table-mounted router with a straight bit and a fence set up for jointing.

When cutting acrylic on the tablesaw, prevent chipping by using push pads positioned close to the cutline to hold the sheet snug to the saw table [Photo 1]. Leave the cover sheets in place when cutting all parts to size.

With the parts cut, remove saw-blade scoring marks by adjusting your jointer to remove ⅛" and jointing the edges [Photo 2]. For smooth edges, use a slow feed rate. Joint all four edges of each end, and the top and bottom edges of the sides. The ends of the sides and all four edges of the top are flush trimmed after assembly and do not need to be jointed.



Steady short parts by holding them tightly against a follower block. Don't run the follower block over the cutterhead. When the workpiece clears the cutterhead, back out the follower block.



With the assembly spacers holding the ends square to the face and top edge of the side, place weights (quart finish can shown here) to hold the assembly in position. Then apply solvent cement to the side/end joint.

## Start putting it together

To make assembly easy and ensure a square cover, make two assembly spacers from plywood, particleboard, or MDF. Make the length the same as the

inside dimension of the cover sides, and the height ⅛" narrower than the width of the ends. To avoid gluing the spacers to the inside of the cover, cut or rout 45° bevels on the corners.



## CRAFT AN ACRYLIC CASE FOR COLLECTIBLES

Transfer some solvent cement from the bottle to the applicator. The solvent is water-thin and difficult to pour without spilling, so use a funnel or transfer it with an eyedropper. Before starting the assembly, practice flowing the solvent cement on acrylic scraps.

Peel back the cover sheets on the sides 1" from each end. Cut away the excess with scissors, taking care not to scratch the acrylic. In the same manner, peel and cut the cover sheets along the sides of the ends and all four edges of the top.

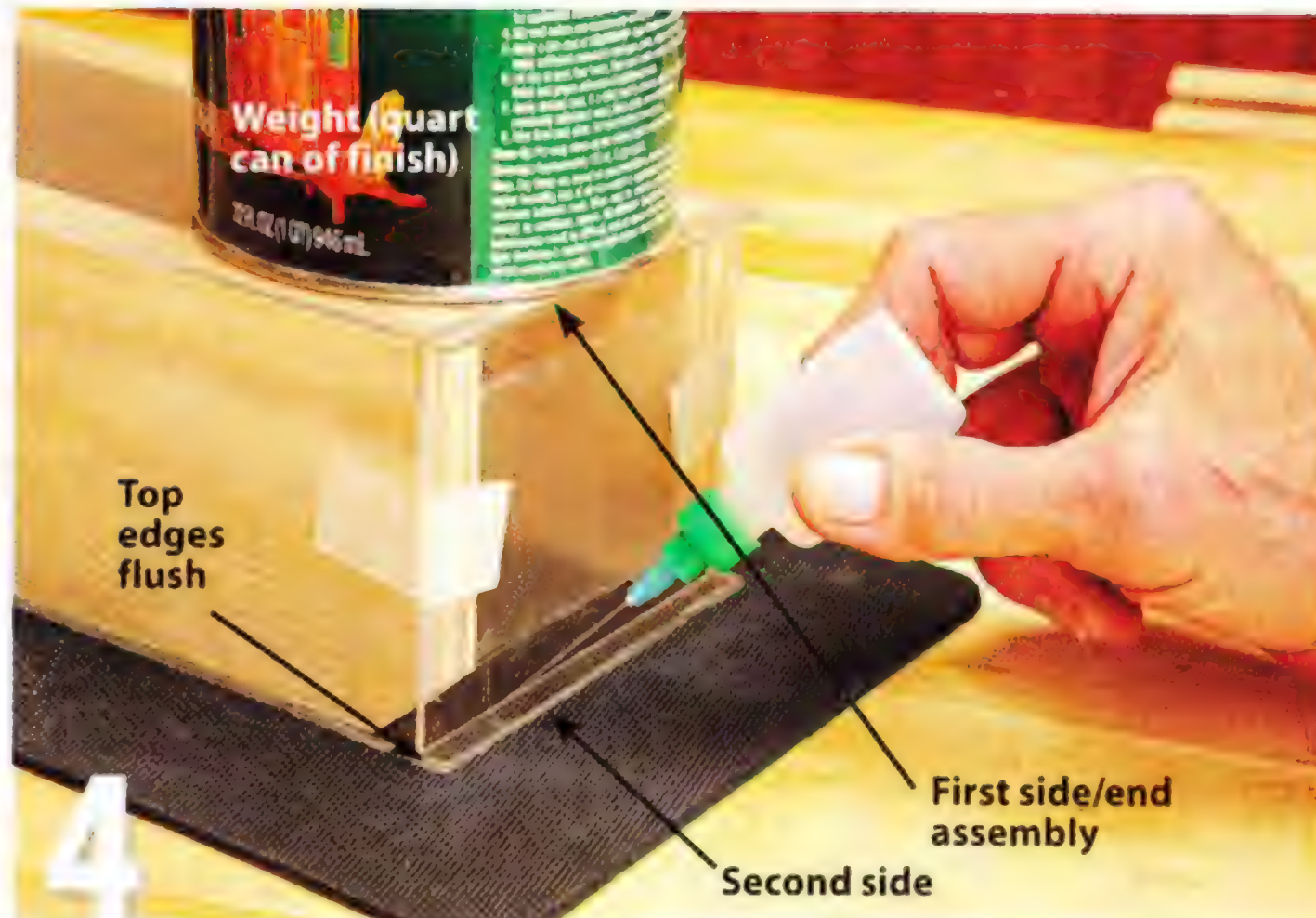
To avoid scratching the acrylic, place a resilient pad on a flat surface and position one side on it. Align one assembly spacer with each edge of the side, centering them end to end. Apply weights to hold the spacers in place [Photo 3]. Position the ends, making sure the top edges of the side and ends are flush. Use a square to make sure the ends are square to the top edge of the side. Secure the ends to the spacers with masking tape.

Apply solvent cement from the outside with the applicator. The solvent flows through the needle almost by itself, so dispensing it requires only a gentle squeeze. Be careful not to splash any solvent on the end. Place the tip of the needle in the corner formed by the end and the protruding side near the top edge and move it along the joint to the bottom edge. Capillary action then draws the solvent into the joint; you'll see the joint turn transparent as the solvent flows in. Let the assembly dry for 20 minutes. Then repeat for the other end and the second side [Photo 4].

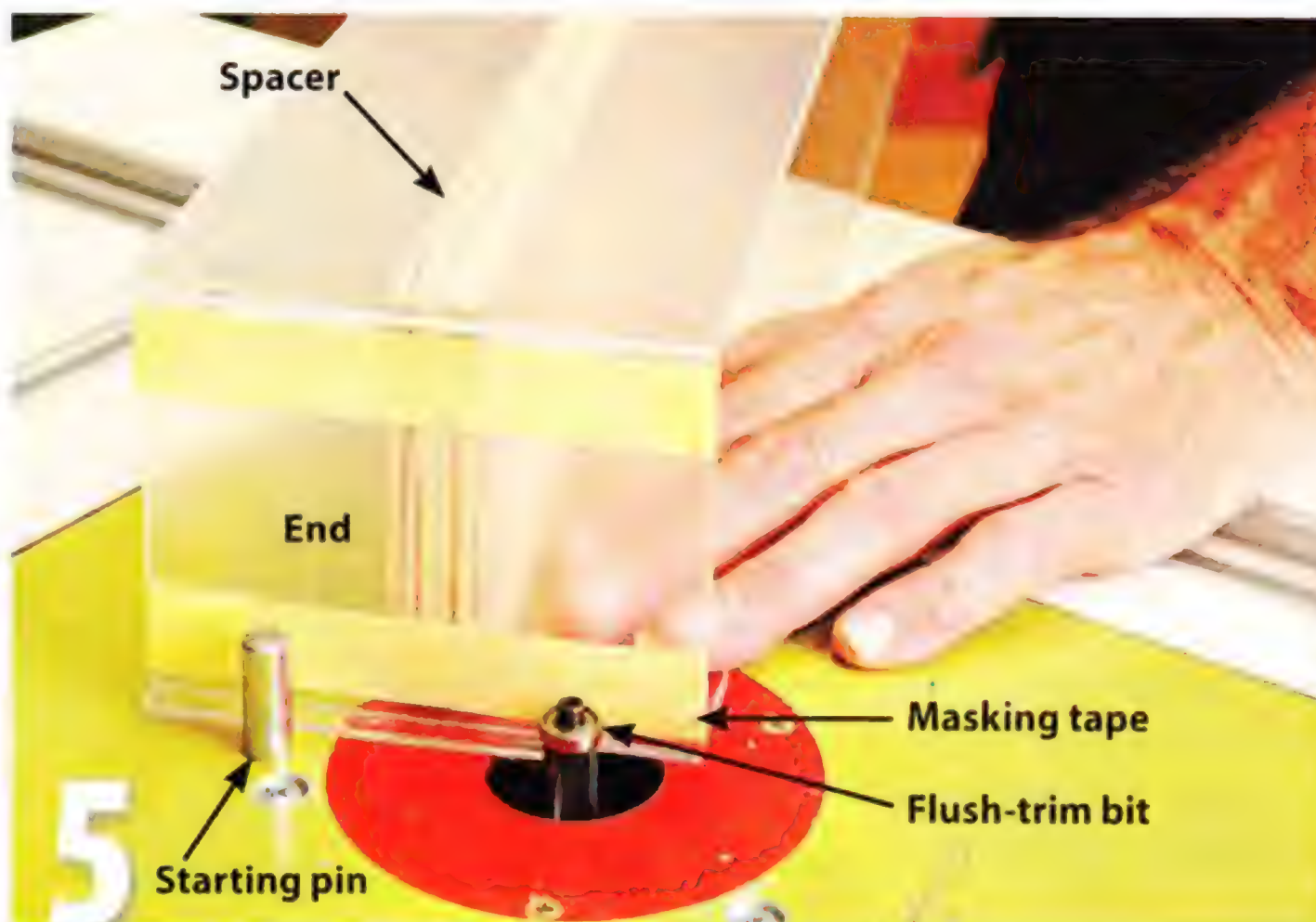
Next, install a flush-trim bit in your table-mounted router and adjust it so the cutters stand about  $\frac{1}{16}$ " higher than the thickness of the acrylic sheet. Apply masking tape to the ends to protect the acrylic from the bit-pilot bearing. Place one of the spacers inside the assembly to keep it square, then flush trim the protruding ends of the sides [Photo 5].

Place the cover top on the pad, center the sides/ends assembly on the acrylic, and apply weights to hold the parts in position [Photo 6]. Apply solvent cement to the first side from the outside and let it dry. Align the second side and apply cement to the side and ends. Let the cement dry, then flush-trim the top [Photo 7].

Remove all tape and cover sheets. Ease the outside corners as shown in Photo 8.



Position the first side/end assembly on the second side with the top edges flush. Apply solvent cement to the side/end joint. A gentle squeeze of the bottle flows the water-thin solvent onto the joint. The joint sets in just a few minutes but requires 24–48 hours to reach its maximum strength.



Trim the sides flush to the ends. Use the starting pin to help control the start of these cuts on the router table.



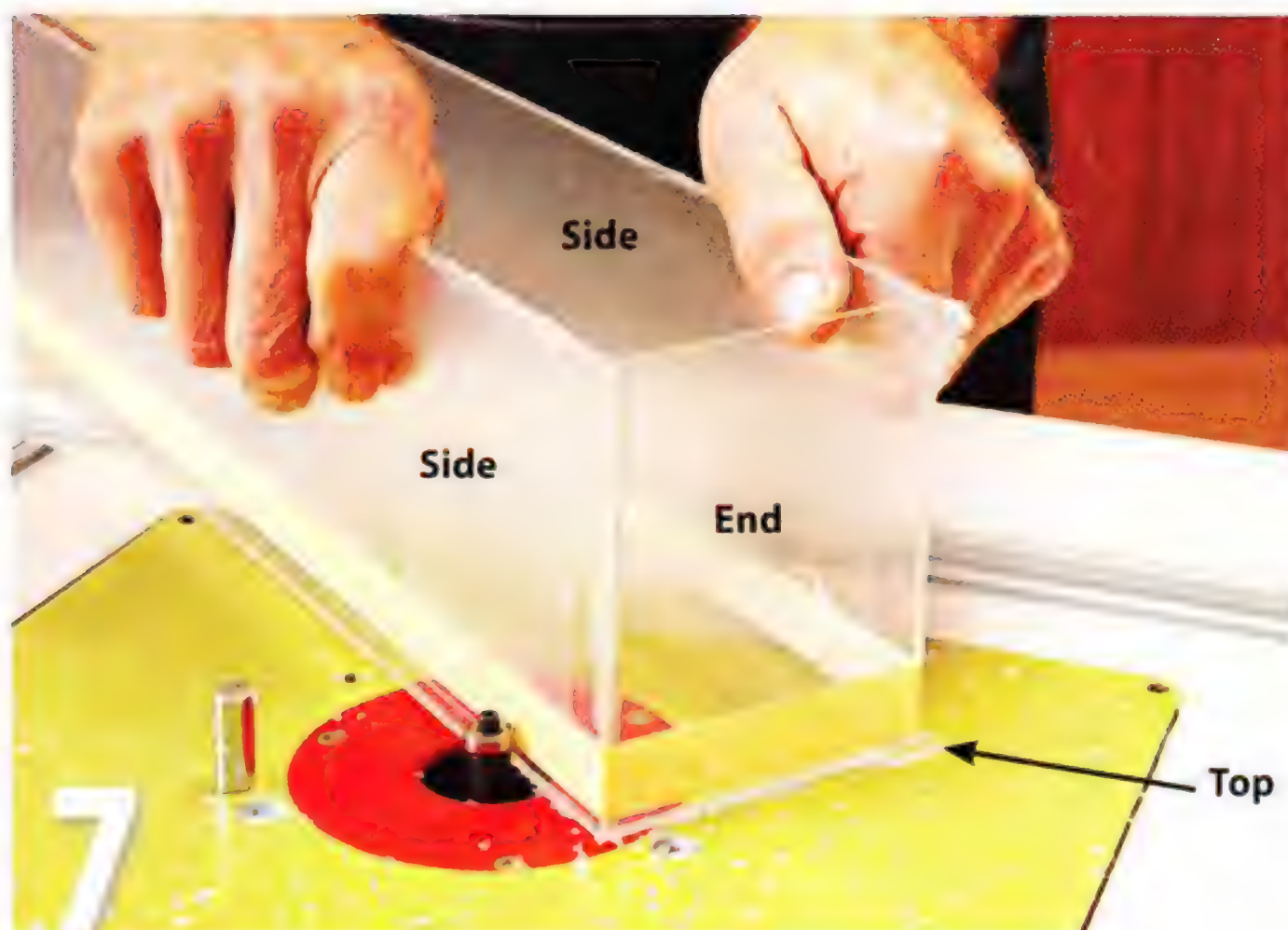
Center the sides/ends assembly on the top and apply weights. Align the first side with a straightedge, pushing the side against the straightedge from the inside.

### Finally, build a base

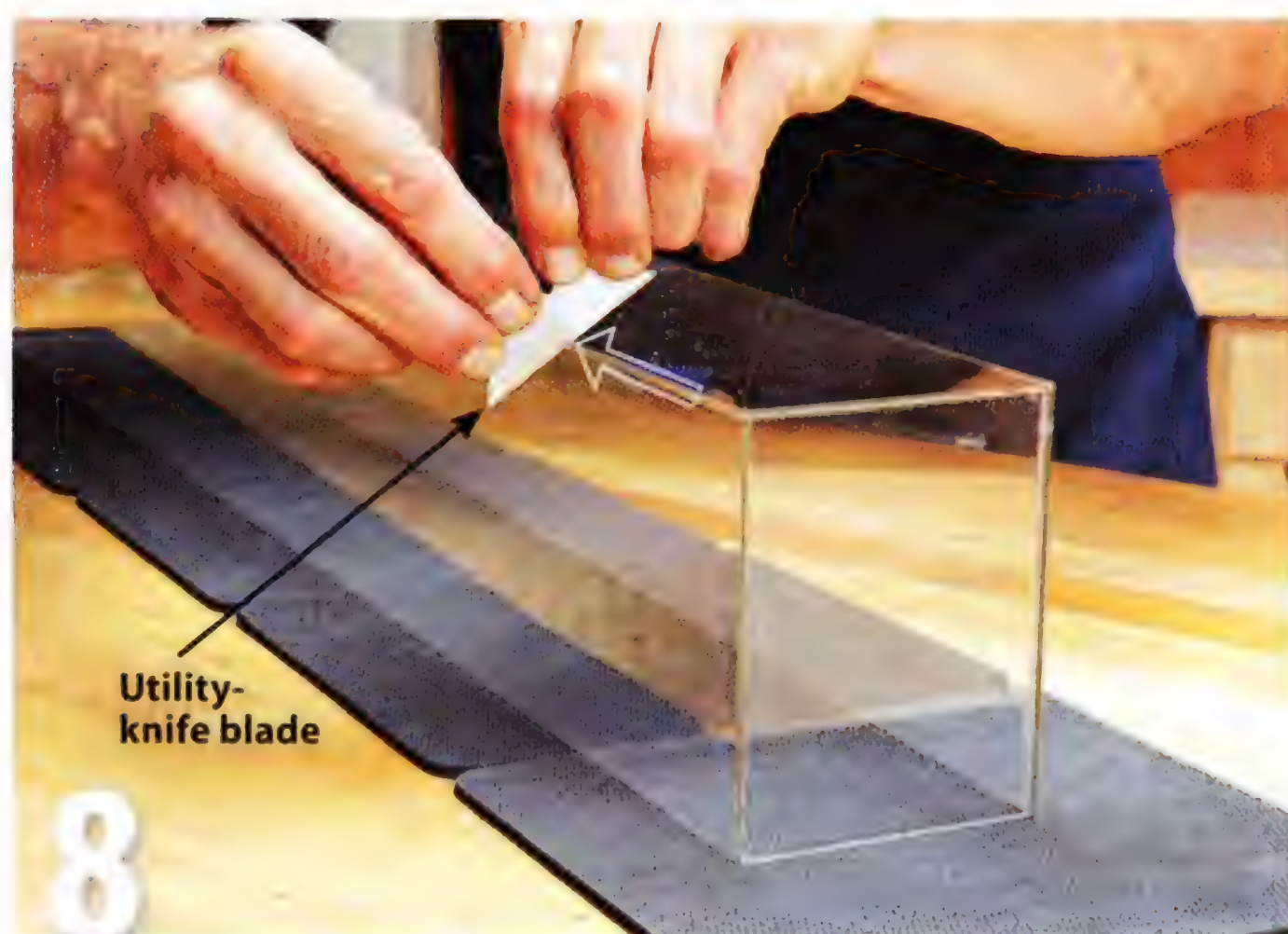
Cut the base panel from  $\frac{3}{4}$ " hardwood-veneer plywood or MDF, making it  $\frac{1}{16}$ " larger in length and width than the outside dimensions of the cover. Install a rabbeting or straight bit in your table-

mounted router and adjust it to cut  $\frac{1}{4}$ " deep. Position the fence to rout a rabbet slightly wider ( $\frac{1}{32}$ ") than the thickness of the acrylic used for the cover. With the base upside down on the router table, rout a rabbet along the top edges. Test





With a flush-trim bit, trim the protruding acrylic edges of the top.




Ease the sharp corners with a utility-knife blade. Hold the blade perpendicular to the corners. Use light pressure and make several passes (pulling action).

the fit to make sure the cover drops into the panel rabbets without binding.

Make enough beveled trim to fit around the base perimeter [**Exploded View Drawing**]. Miter the trim to fit, and glue and clamp it to the base. Finish-sand the base to 220 grit. Apply several coats of clear finish, keeping finish out of the groove of the base. Sand lightly with 220-grit sandpaper between coats.

## Finish up

Secure the object on the base. (The railroad track was screwed to the base for this display.) Carefully remove dust using a soft natural-bristle brush and low-pressure compressed air. Polish the cover with Novus 2 fine scratch remover (see **Sources** below), following the directions on the container. Rinse with warm water and dry with a soft cloth. 

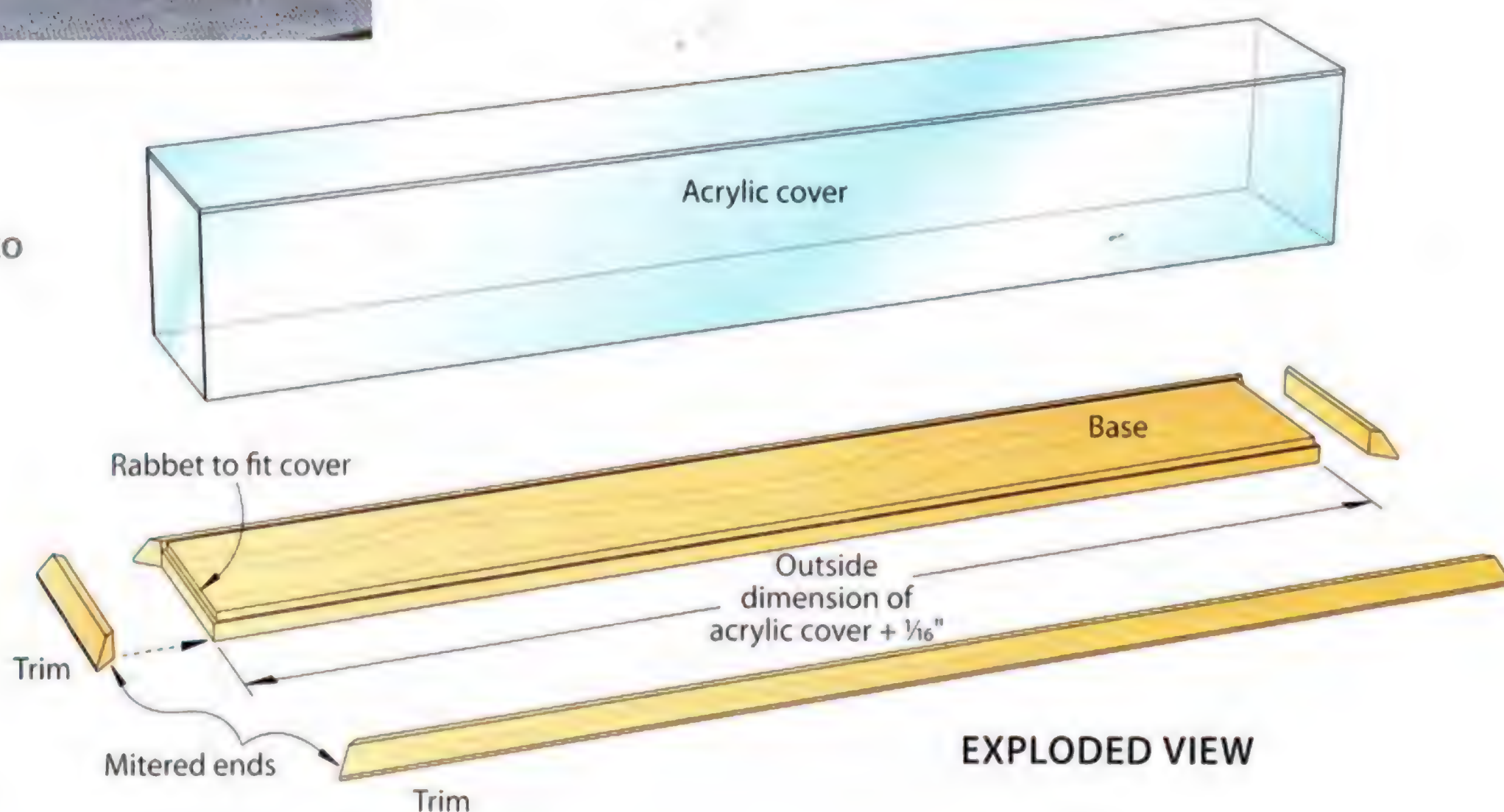
Written by **Jan Svec**

Illustration: **Roxanne LeMoine**

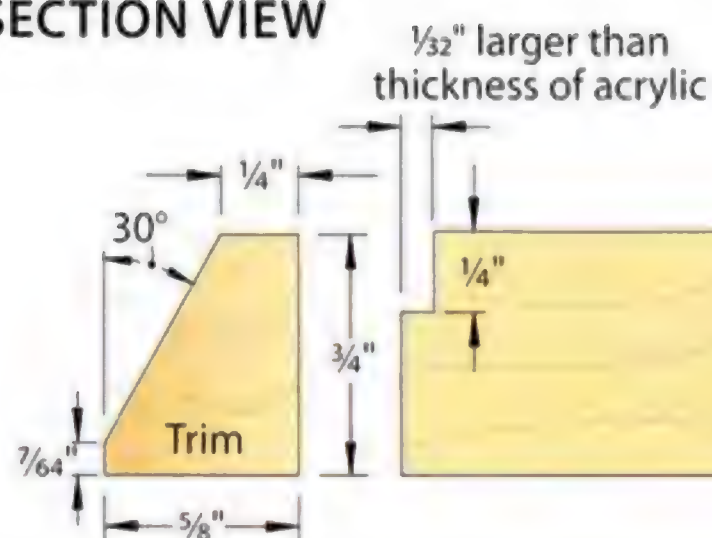
## Sources

- For plastic materials, and tools and accessories for working with plastics, go to [craftics.net](http://craftics.net).
- For more display options, such as stands and fixtures, lighted bases, glass domes, or ready-made box cases, visit [jule-art.com](http://jule-art.com).

Access a FREE tablesaw fence plan to cut plastic laminate at: [woodmagazine.com/auxfence](http://woodmagazine.com/auxfence)



## SECTION VIEW





# Big-league basement



It's the next best thing to being at the game in person. For Jim Meehan and his friends, *Take Me Out to the Ball Game* means descending just a few steps into Jim's basement sports retreat—complete with historic seats and free popcorn, beer, and peanuts.

**C**atching a game in a major-league stadium offers timeless perks: the roar of the fans, the matchless combination of a ballpark hot dog and a cold beer, nostalgia wall-to-wall, and weathered folding stadium seats. Jim Meehan gets that same experience in his basement.

The St. Louis native and lifelong Cardinals baseball fan came up with the idea for his basement stadium during a 1994 trip to Chicago. Jim and some friends stumbled upon a shop selling folding seats from Chicago Stadium, former home of the Blackhawks and the Bulls, and he snatched them up for \$75 each.

"I really started buying seats left and right," Jim says. "Eventually, I had all these seats and nowhere to put them."

Already an avid collector of St. Louis sports memorabilia, Jim immersed himself in the seat-collecting culture. He learned when to buy, how to spot a fake, and which seats are going to demand the highest price. (For more details, see **Only the Best Seats in the House**, page 61.)





Since being bitten by the bug, Jim has assembled an enviable collection of more than 50 seats. Those in his man cave once resided at St. Louis Arena (demolished in 1999); Sportsman's Park (the baseball Cardinals' home from 1881–1966); and the new Busch Stadium (circa 2006). Jim also collects seats from non-St. Louis teams, including War Memorial Stadium in North Carolina, which catered to minor-league baseball teams from 1930 to 2004, and Maple Leaf Gardens, Toronto's hockey temple.

"It's an unusual collection," Jim admits. "There are only a handful of serious seat  
*continued on page 61*



For his nuptials, Jim had a personalized Louisville Slugger bats created for all the men in his wedding party.



*Opposite:* Jim Slama, Jim Meehan, Mike Villhard, and Bill Book watch the 2011 World Series Game 6 in Jim's basement.

*Inset above:* Jim's quarter-scale Gold Glove replica pays homage to Cardinals Hall of Fame shortstop Ozzie Smith.

*Above:* Built with the help of friends Bill Book and John Aughey, a television surround in Jim's basement captures the look of Busch Stadium, complete with a scale-model replica neon sign.

*Right:* Jim's bobblehead collection includes Cardinals greats Jim Edmonds and Albert Pujols.





## YOU CAN DO IT

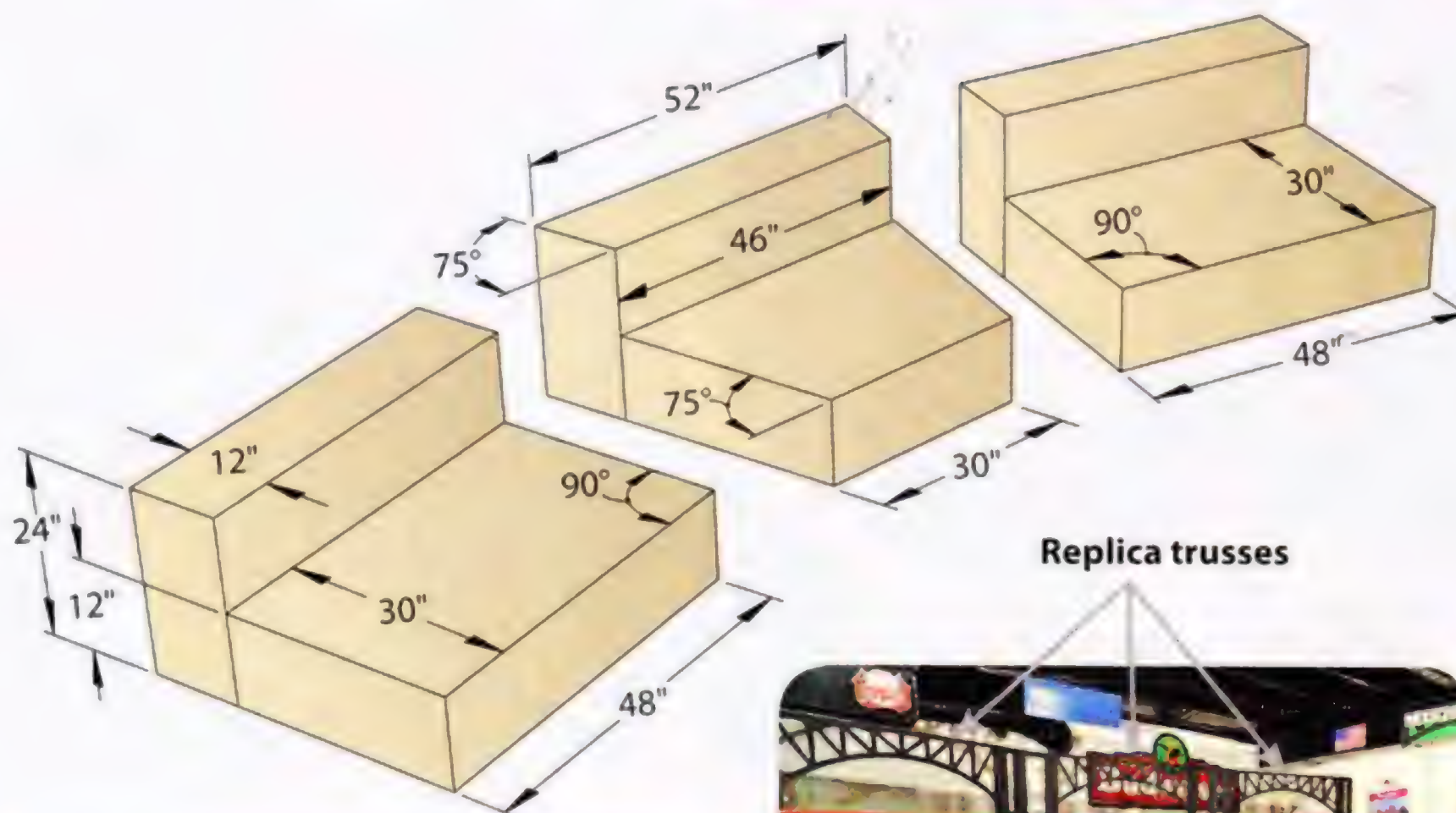
To make it easier in case he ever moved, Jim Meehan designed and built three freestanding risers for his collection of stadium seats. He constructed the risers from 2x12s and ½" plywood. (The back row of seats always remains in the up position—for looks only.) Jim painted the risers a neutral gray to emulate concrete.

One of Jim's first projects was spraying the floor joists flat black. His buddy Bill Book knocked that out in an afternoon.

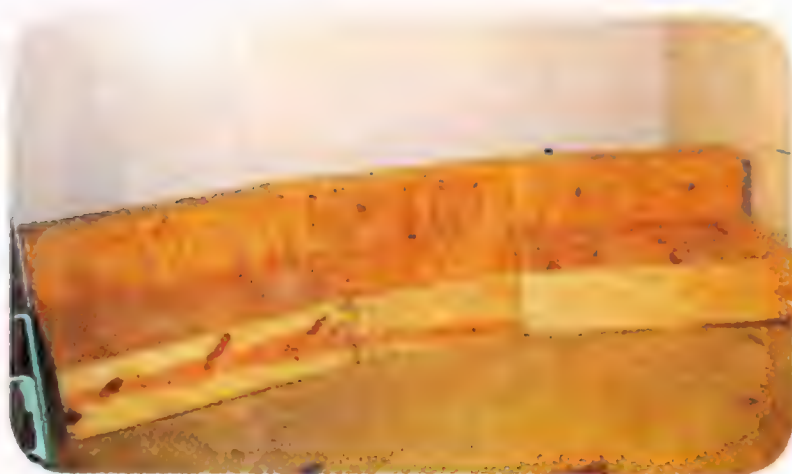
To cover the existing 12x12" vinyl composition tile (VCT) flooring, Jim rolled on two coats of Kilz primer and then two coats of Valspar Chesterwood French Green, a satin porch/floor latex. "I make some 'grounds-keeping' touch-ups occasionally, but I haven't had to repaint it yet," Jim reports.

As much as the basement remains Jim's creative domain, it's his wife, Jenne, who steps up to the plate for tour duty. "She's the first one to take someone on a basement tour," Jim says. "She really loves this place, buys the hot dogs, buns, popcorn, and whatever else I need to make sure we have a good time."

And now, the basement ballpark has become a favorite hangout for their 9-year-old son, Patrick, for weekend movie nights with his buddies.



Replica trusses







## ONLY THE BEST SEATS IN THE HOUSE

Fake stadium seats can easily be passed off as authentic. To avoid getting taken, follow these tips:

**1. Buy from a reputable dealer.** Several collector/dealers take great care to make sure that you get an authentic stadium seat. I have personally met and dealt with these vendors in the past:

- Mike Rozanc [authenticstadiumseats.com](http://authenticstadiumseats.com)
- Steve Archer [archerseating.com](http://archerseating.com)
- George Tahan [ballparkseats.com](http://ballparkseats.com)

**2. Always request a certificate** of authenticity—especially if the seat has autographs.

**3. Never buy a seat** that's been "refurbished" or repainted unless you know the person (like the dealers listed above, who refurbish seats). When I buy a seat, I want it in the original condition, gum and all.

**4. Ask a lot of questions** before you purchase. Become informed. Check out the Web sites listed above. Vintage stadium seats average about \$500–\$600 each, so it's an investment.

**5. Finally, buy what you enjoy.** There are lots of different seats in all major sports to be had. Have fun!

—Jim Meehan

Three 7½"-wide shelves behind baseball seats include other sports collectibles: a FIFA World Cup replica, treasured Wheaties boxes, and scale-model historic ball parks.

*Inset:* Autographed baseballs in acrylic cases line the stairway leading to Meehan Park.

*continued from page 59*

collectors in the U.S. I have to tell newcomers where every seat is from, and that usually leads to a discussion about what stadiums they've been to, and where I'm going to get my next seat for my collection."

Jim started planning his shrine 15 years before its construction with the purchase of his first two stadium seats. But the dream of a dedicated sports-watching hideaway was benched when Jim started a family. "When we got married and bought our house, I told my wife that I wanted to make the basement stadium a reality. Of course, we didn't have the money then. I would always ask 'Can we do it now? Can we do it this year?' Finally one year we had enough in



## BIG LEAGUE BASEMENT



A blue ticket-stub receptacle from old Busch Stadium and replica Stanley Cup trophy flank yellow seats from the St. Louis Arena and folding red seats from the Chicago Stadium (the first seats Jim purchased). He bought the back-row seats (red) from three different parks and arenas.



Jim sprinkles 14×6" enlargements of favorite tickets around his ballpark. (Some tickets mask the starkness of the heat runs above). Jim ordered several mini-mega tickets online (thatsmyticket.com; about \$20). A local blueprint shop enlarged other tickets.

the budget. I've got a creative mind, so I kind of went crazy with it."

Construction on Meehan Park, just a 300-square-foot space, started in January 2009. The project turned into almost a five-month process that included the construction of shelving, carpentry (soffits), and a lot of painting. Jim labored tirelessly after work and on weekends

to prepare his sports sanctuary for the opening of baseball season.

"The painting took the longest," Jim says. "We had to apply several coats, and there's so much memorabilia in there. I didn't want to splatter paint."

Instead of carpeting, Jim opted to paint the tile floors a deep shade of green to simulate the lush grass of Busch

Stadium. To save money, he patched existing luaun wall paneling and then rolled on white paint, a compliment to the prominent Cardinals red and an effort to make the space look bigger.

When it comes to the actual construction process, Jim has one piece of advice: The more friends you have, the faster it goes. He enlisted Bill Book, a carpenter, and John Aughey, software engineer, to help him piece everything together. John helped him design and construct his custom stadium risers (*page 60*), which display his seats. Bill helped Jim emulate the classic feel of Busch Stadium by creating custom trusses (displayed behind the seats), a TV surround, and a working scoreboard *opposite*.

"I definitely wanted a stadium 'feel' to my man cave. I've had this stadium





This is better than the ballpark! Free popcorn, peanuts, hot dogs, and beer. (Free parking, too.)

idea in my head for over 15 years," Jim says. He built each stadium detail from medium-density fiberboard (MDF), using as guides, foam-core templates he designed himself. Bill acquired Busch Stadium blueprints to complete the authentic detailing for the trusses.

When Meehan Park had its opening day on May 15, 2009, a sellout crowd of 12 turned out to watch the game. To entice return visits, Jim has created custom prizes, such as souvenir cups and mini bats emblazoned with the Meehan Park logo, to hand out to the first fans at the basement stairwell (**Get Personal**, right). When baseball season wraps up, he transforms Meehan Park into Meehan Stadium or Meehan Arena. The Meehans has even hosted family movie nights for his kids in the basement.

Of course, a genuine man cave is never finished. Jim has racked up some interesting items, including an official proclamation from the Missouri House of Representatives commending his collection. But there are still some things he'd like to touch up. For example, Jim is scheming to add faux bricks to the walls to replicate a look similar to the new Busch Stadium. He also has dreams of adding more realistic stadium lights, a gift shop, and a ballpark organ.

For now, Jim is happy with the personalized way to display his collection. "My best suggestion is to incorporate what you have into your space," he says.



Jim created a ballpark scoreboard, which hangs on a wall in view of the television screen, for his basement stadium.

"My goal was obviously to display the seats—that's my passion—because I'm a history buff. Some people prefer to collect cards or autographs, but those seats can really tell a story. Who sat in them? What have they been through?"



## GET PERSONAL

Jim, who studied commercial art in college, created logos, *above*, for each sports season he hosts in his St. Louis man cave. He incorporates the logos into game invitations, signs, plastic cups, and other memorabilia. With a new sports season, Jim morphs into a stage crew and switches up the decor, including logos.

And what's an outing at a ballpark without a T-shirt, apron, or coffee mug? Gotcha covered there, too. Jim set up a Web site ([cafepress.com/meehanpark](http://cafepress.com/meehanpark)) for all the standard apparel and gift items. Proceeds benefit a local food pantry, one of his favorite St. Louis charities.

Written by **Joe Stych**  
Photos: **Jonathan Neff** and **Phil Shoulberg**  
Illustration: **Roxanne LeMoine**



# All-star framing for your favorite jersey

If your hangup is sports, give a little extra attention the details when preparing a jersey for display.



David Nelmark was still in high school when he scored this autographed Kurt Warner jersey while the future National Football League MVP toiled in the Arena Football League.

**Y**ou've probably had a droopy jersey catch your eye in some sports bar and thought to yourself, "If I ever frame a jersey for my man cave, I sure hope it looks better than that!" Here's how professional framer Andy Snyder of Des Moines, Iowa, does it the right way from the get-go.

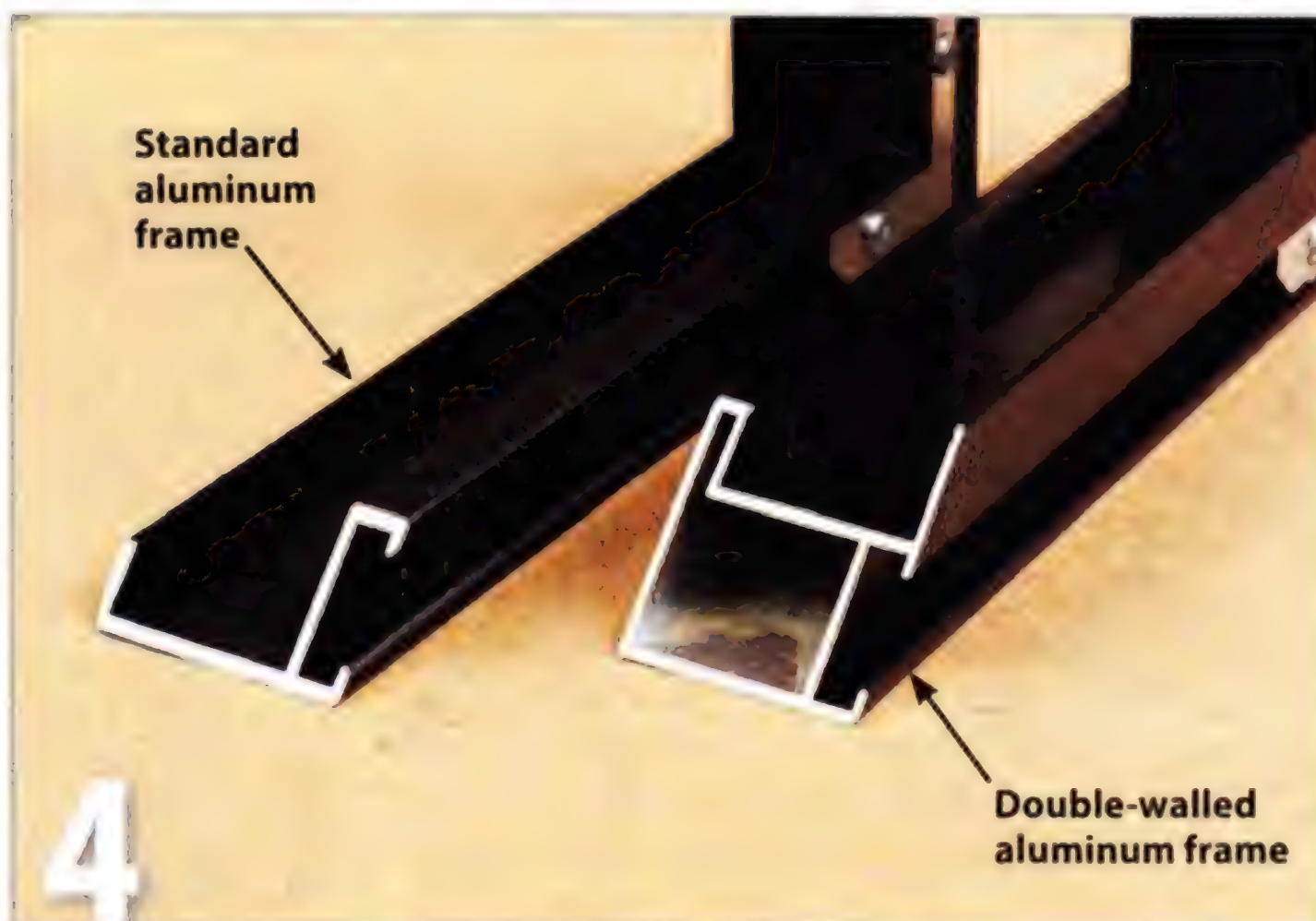
Andy has framed everything from baptism gowns to Minnesota Viking rally towels to jerseys. "You can't stop gravity," Andy says, "no matter how hard you mash the fabric between glass and the mat board.

"The secret to keeping the memorabilia looking great for years is to hand-stitch the fabric to mat board. I match the thread color to the material so you really never see my stitching."



Prepare for stitches along jersey edges and seams.

With a darning needle, Andy pokes 30 strategically placed "guide" or starter holes through the jersey and a standard mat board.



Standard aluminum frame

Double-walled aluminum frame

For weighty projects like athletic jerseys, Andy selects double-walled aluminum framing material, which prevents the frame from bowing.



While holding the two mitered pieces snug, Andy tightens the two screws that secure the corner.





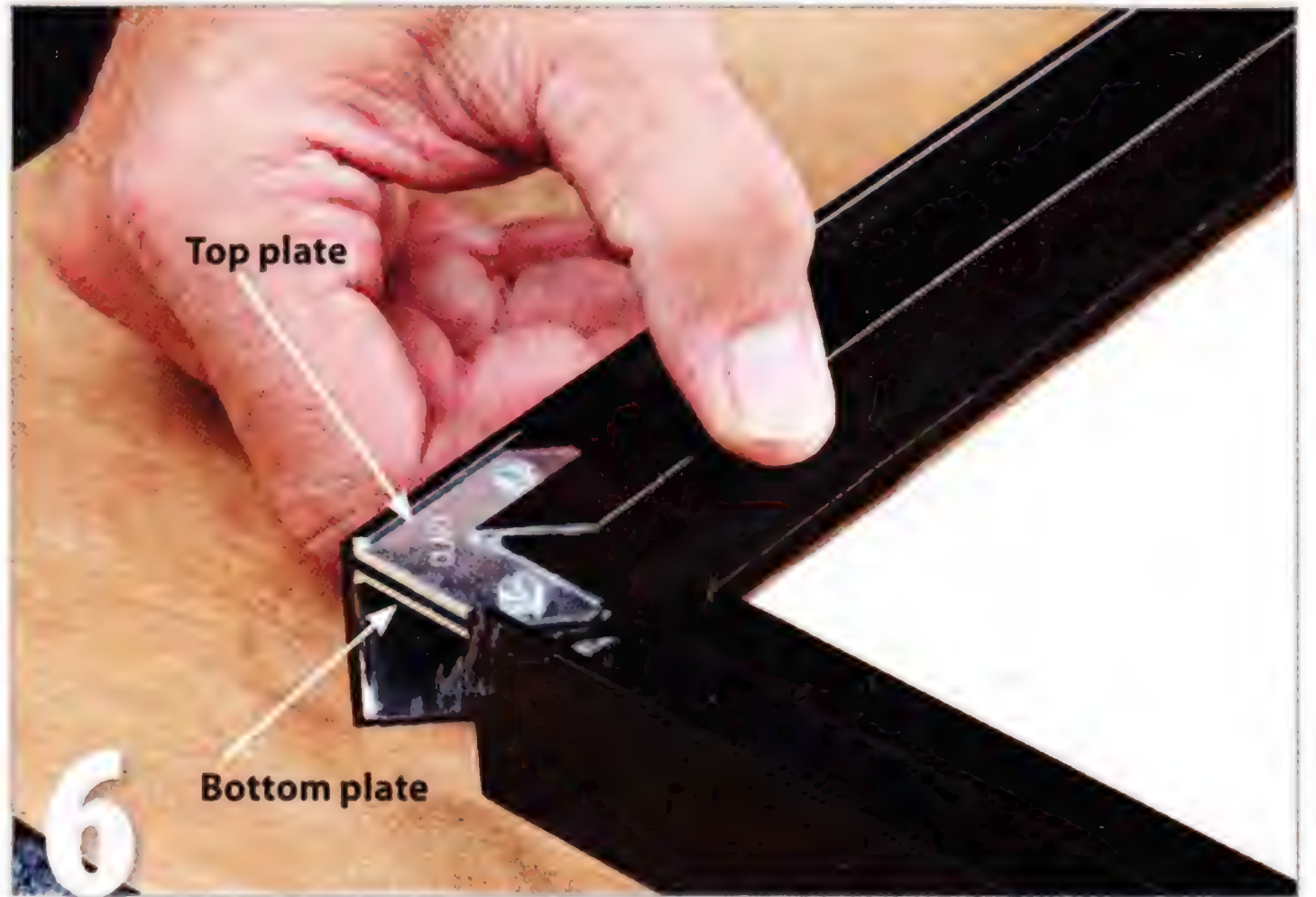
2 Using a sewing needle and standard rayon thread, he stitches through the mat board and fabric, leaving the threads' ends on the back.



3 After drawing the thread taut and tying an overhand knot, Andy clips away the excess from the thread ends.



5 To avoid squishing the jersey against the glass, Andy applies an acrylic  $\frac{1}{8}$ "W  $\times$   $\frac{1}{4}$ "D self-adhesive spacer around the perimeter of the glass.



6 With the jersey and glass now in place (first two corners already assembled), Andy slips a bottom plate and top plate into the track.



8 Spring clips hold the assembly (glass, jersey, and mat board) snug to the front of the frame. Each side of this frame has four springs.



9 Andy secures the hanger fixture about one-third of the way from the top corner. He prefers plastic-coated stainless-steel braided wire. (Size 5 shown.)





# Star-quality frames

It seems silly to collect photos, posters, or other printed collectibles and then shove them into a drawer. To really appreciate your prized prints, display them in custom frames and mats for all to see.

**B**ill Cutler is an original donor to/member of the Rock and Roll Hall of Fame in Cleveland. (He attended the 1995 ribbon cutting.) Over the years, membership has provided him plenty of access to rockers at special annual events.

This collector has lined his basement hideaway with frames from big bands, blues, and rock 'n' roll favorites. "Not all of my collector friends go crazy with frames," Bill says, "but I really like to find things that look good together and then hang them on the wall. And there's a story to tell about each arrangement."

"I've been lucky because I've worked with a couple of great framers whom I've become comfortable with. They offered plenty of ways to make my collections jump off the wall. Some are brilliantly simple."

The matting and framing ideas shown transfer easily to other collectibles—sports, pop culture, whatever—that you've stashed away.

## Wonderful Tonight, wonderful frame

To accent autographs collected at a George Harrison and Eric Clapton concert (1991), the framer cut five mats on steep diagonals. "Adding a thin, rose-colored mat was a surprise," Bill says, "and I love it."

## Johnny B. Goode framing

Five black mats and a single red mat rock your eyes to a simple black-and-white Chuck Berry concert poster (circa 1960s) preserved in a 2"-deep frame.





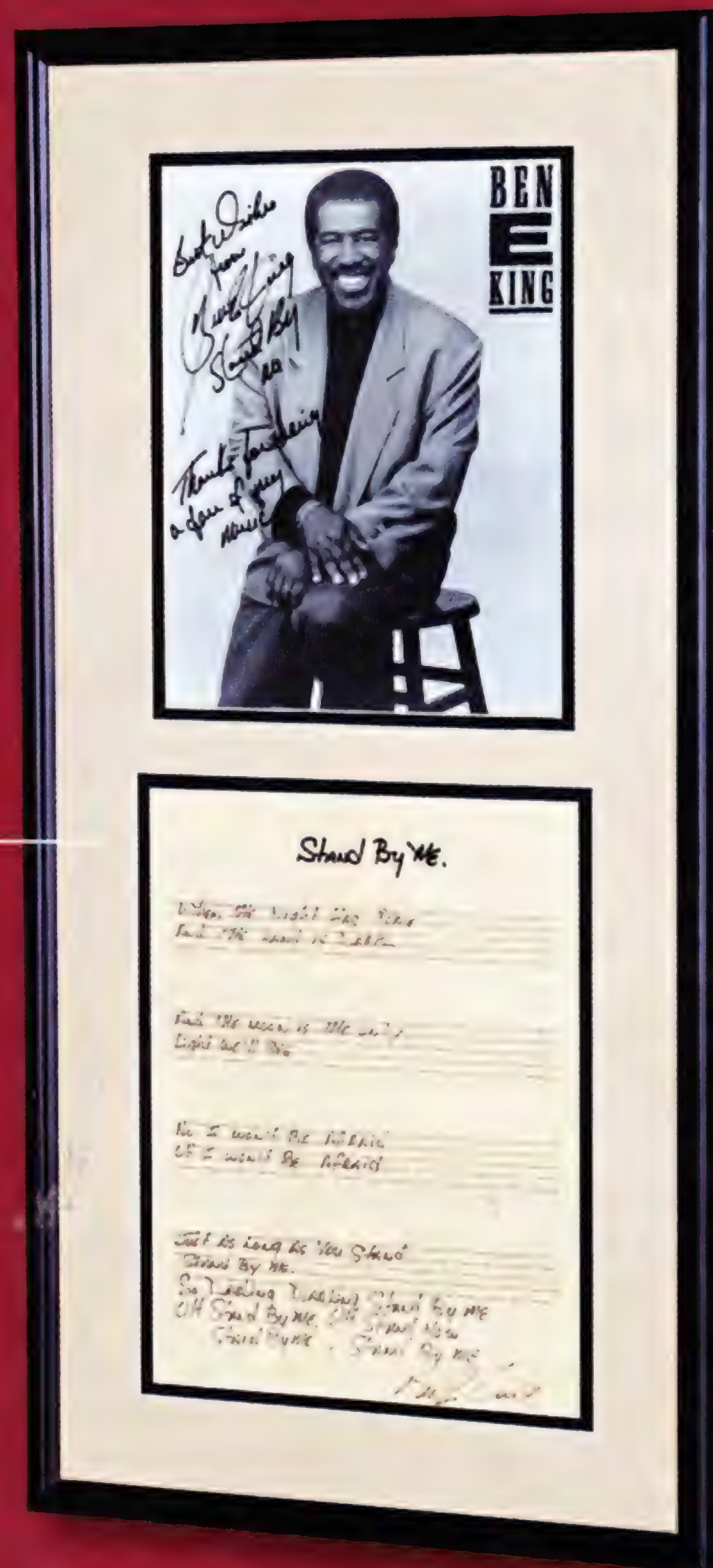


### Look at Us memorabilia

"This was a challenging trio to group," Bill says, "but I like the way my framer used five irregular-cut mats to pull together an album cover [1968], record-store counter card, and backstage concert pass."

### A frame that sings

Classic cream-and-black mats surround two windows for Ben E. King's promotion photo and autographed *Stand By Me* lyrics (1961).



### Windows to Woodstock

White, sand, and green bevel-cut mats pick up colors in an original Woodstock poster signed by Rick Danko, lead singer of The Band. A second window displays an unused three-day Woodstock ticket (\$18 cover price).



### Tips for an autograph collector

Whenever Bill Cutler attends a concert, he carries a couple of pens with him (he prefers gold and silver Pilot pens, right) and a simple point-and-shoot camera to record any chance meetings with music stars.





Add a dash of color and Americana to your man cave with iconic promotions for everything from A to Z.

## Signs of the times

**S**igns featuring well-known product brands have become iconic reminders of a simpler time, surrounding you with nostalgia boldly proclaimed through a logo or color theme. Little wonder that tin signs—whether decades old or reproductions of old-timey signs—find a place in many man caves.

### Some signs survive scrap drives

Although referred to almost universally as “tin” signs, many signs you grew up with are actually steel coated with a porcelain enamel—so durable that unless the finish is damaged, allowing rust to develop—they last nearly forever. Quite a few signs have outlasted the products and services they were created to advertise.

Tin signs took a hit in the mid 1900s though. When the U.S. entered World War II, many were lost to scrap drives, where thousands of signs for defunct products, stores, and businesses took a one-way trip to the smelter. For that reason, good-condition vintage signs for prewar goods and services can be rare, and demand a high price.

Then, as the century progressed, tin, aluminum, and other metals found their way into signs. Those made of cast bronze and aluminum became popular for long-term mounting in locations such as parks, buildings, and monuments. Porcelain enamel remained



Above: Mobil Oil's iconic Pegasus remains popular with baby boomers. Reproduction 30"-wide signs sell for about \$90; the originals may go for \$1,000 or more.



Vintage Coke signs in good shape, such as the classic 36"-diameter "button" design above, will probably fetch close to \$500 or more, depending on condition.

number one for durability against the elements, but other types of paints and coatings also appeared. For indoor use, light-gauge tin, aluminum, and plastic became common.

### Defining original and retro

Original signs still in use command the best prices. Among popular favorites: Mobilgas, Texaco, Esso, and other gas companies; Coca-Cola and other soft drinks; beer and bar-related signs; and highway signs. Prices for these antiques run the gamut, but as rarity and condition go up, so do prices.

*Retro*, a frequently uttered term, has different meanings to different sellers. “*Retro* means signs that are old and have history, and are recognizable from the past,” says Steve Johnson, owner of

Garage Art in Gig Harbor, Washington. “But it can describe *old and original* or *old and reproduction*.” Johnson notes that signs with national recognition remain popular; but rare, regional signs often bring the most money, such as a large porcelain Washington Chief Gasoline sign that sold at auction in 2010 for more than \$20,000.





Likewise, localized or personalized versions of national brands and companies attract collectors. "What might add up to the highest values are two-sided porcelain signs for nationally known products and personalized with a small-shop owner's name and town," says Dean Ferber, owner of No Egrets Antiques & Collectibles in Hales Corners,

At swap meets and collector shows such as the Iowa Gas Swap Meet ([iowagas.com](http://iowagas.com)), sign collectors from around the country spread out automobilia (automotive collectibles) and petrolinia (gas and oil collectibles).



Embossed repro signs, like this Route 66 marker from Retro Planet, closely resemble originals and start at about \$30.

Wisconsin. ([noegretsantiques.com](http://noegretsantiques.com)). "The sign should be big and heavy enough to need two people to carry, but not too big to fit on a wall."

Using Coke as an example, typical smaller signs (less than 24") in fair condition sell for \$50–\$150. Increase the size, and the price goes up; an oval 12×24" Coke sign might bring \$200 to \$400, while the 36" shown on the *previous page* might go for \$500.

For extremely rare and popular signs, prices can skyrocket. An original Route 66 sign, even in truly ugly condition, might go for \$500 to \$1,000—if you can find one. A clean one in good shape might bring \$2,000 to \$4,000. A Route 66 sign from a state with the fewest made (only 13 miles of Route 66 went through Kansas), in excellent condition, with almost no wear? As the saying goes, if you have to ask how much...

When shopping for signs, Ferber says to look for them at any and all places that sell antiques and vintage items. Shop at flea markets, antiques shows, and specialty shows dedicated to advertising. Signs often pop up at estate sales and auctions, and even the occasional yard sale. Not surprisingly, antiques stores often carry some of the rarest and best-quality signs in good condition.



Porcelain signs from auto manufacturers attract plenty of attention at collector shows. This 42"-diameter double-sided sign dates from the 1940s.

You'll find plenty of signs advertised on Internet sites such as eBay and Craig's List, too.

## We'll drink to that

Because a lot of guys entertain in their man caves, many include refreshment areas or even full bars with countertops, bar stools, and beer taps. So what better decoration than a sign declaring the refreshment area "open for business"?

English pub signs have grown in popularity, lending some Old World flavor to many a man cave.

"Older original signs were hand-painted and are now very collectible, although still quite affordable, from \$300 and upward," says Michael Hegarty, owner of English Antique Imports of Boone, North Carolina. The most expensive sign Hegarty has ever offered

## BUYING TIPS

### Advice from the experts

- Map your wall space before buying and hanging signs.
- Do your homework; know the value of what you want.
- Mix sign colors with colors you want to bring out in the room.
- If you like it, buy it—good original signs don't stay long on the market.
- As with any collectible, have vintage signs assessed for insurance purposes.
- If it looks too good for the price, it's probably not real.



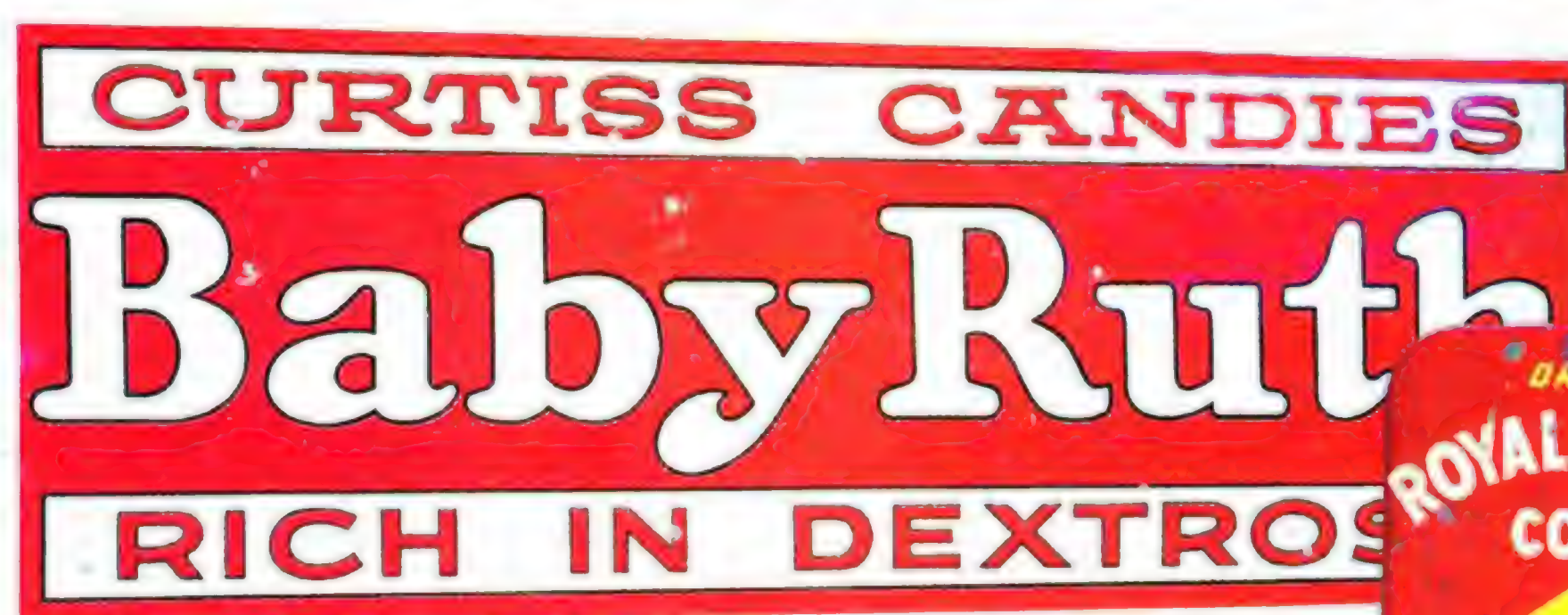


English pub signs attract attention today. Vintage signs, like the hand-painted "Black Horse," may start at \$300.



Embossing sets apart from plain flat signs this 19x15" reproduction of a Pontiac dealership sign from the 1930s. It sells for \$55 at Garage Art.

Garage Art offers this reproduction Bear Service sign, measuring about 18x25", for \$80.



for sale was for a pub called the General Wolfe. That sign, selling for around \$1,200, pictured youthful British Major General James Wolfe (1727-1759).

"It's a superb portrait in oils of an important historical figure, sometimes called 'The Conqueror of Canada,'" Hagarty says. "If it were an oil portrait on canvas, rather than a steel sign, it would command a far higher price."

Most pub signs are, in fact, framed sheets of painted steel. You'll find a few all-wood signs, but metal signs top them in popularity due to their durable nature.

Traditional English sporting events—especially soccer, horse racing, boxing, and cricket—command a lot of attention. Also in high demand: animals and depictions of historical events.

## Restore some more

You've put a lot of work into your cave, so naturally you want it to look its best. That's not a problem with shiny reproduction signs modeled on originals, but when it comes to restoring or repairing vintage signs, the experts all seem to agree on the best way to do it: not at all.

"Quality in its original state determines value," says Jerry Martin, retro

shop manager at The Art Factory of Scottsdale, Arizona. "Never restore a sign. That devalues it." If you want a sign that looks brand new, buy a reproduction.

On the other hand, cleaning a sign makes sense. You can't damage a porcelain sign as long as you go slow and easy. For sprucing up porcelain signs, The Art Factory uses a general cleaner and degreaser called SuperClean. Employees rely on paint thinner to soften and remove road tar. After removing dirt and tar, they bring out the original shine with car wax and a high-speed buffer. For bullet holes, rust, and areas where the porcelain may be missing, Martin recommends jojoba oil, which helps seal rust but doesn't affect the sign's value.

Clean painted signs carefully. Martin recommends a cloth dampened with a weak solution of water and dishwashing detergent, or even just plain water. Dry off the sign promptly. If you want a bit of a shine, try a light coat of car wax gently buffed by hand. Start cleaning on a small, inconspicuous spot; if you see damage occurring, stop immediately.

Martin suggests special attention with the hand-painted signs. He suggests a light, basic cleaning with SuperClean.

Above: Tin signs, like this Baby Ruth advertisement, hung at grocery stores or drug stores.

In the 1950s and '60s, automotive, petroleum, and soft-drink companies used thermometers to advertise their products. This tin sign is about 18" tall. Original signs sell for \$200-\$250; reproduction thermometers sell for about \$20.

## Try a new route

Although many man cavers appreciate vintage signs, reproductions carry smaller price tags and shine as bright as the day they rolled out of the metal stamper. Other reproductions look seriously old and abused, even to the point of added faux bullet holes.

With *repro* signs, rarity doesn't come into play. An original Route 66 sign fetches too many bucks for most of us. But a repro tin Route 66 sign may go for only \$10, depending on the weight, size, and construction details, while a plastic version sells for less.





We found this 4x3' hand-painted Indian Motorcycles sign hanging in a farm shed. It's believed to be a dealer's sign from the 1930s. For now, it's not for sale.



Ron Hoyt, organizer of the Iowa Gas Swap Meet, collects driveway signs, which originally hung on a stand. Back in the day, service-station attendants parked signs, like this 30"-diameter Johnson Gasolene porcelain sign, by the pump island.



Retro Planet sells a fully embossed Cowboy Parking fantasy sign, while its repro Fallout Shelter sign matches the flat originals.

Bullet holes riddle this original 24x24" porcelain sign from the 1920s-1940s. Like many porcelain signs of the period, it has the same design on both sides.

The least expensive signs—frequently made of thin, lightweight steel or tin—are often smaller than the originals. The silkscreen signs (printed, not painted) look crisp and new and sell for \$5–\$15.


Take a step up in quality and you'll get heavier metal, closer in size and weight to vintage ones. These generally go for \$12–\$25.

But for the ultimate in reproduction signage, a number of companies manufacture repro signs that feature porcelain graphics and die-cut, embossed steel patterns, just like the originals. The Route 66 sign from Retro Planet on page 69, made of heavy 16-gauge steel with a baked porcelain enamel finish, typifies these high-quality signs. These beauties start at around \$30 and move up the price scale depending on size.

Garage Art's Steve Johnson says to keep two things in mind when shop-

ping for reproduction signs: "Look for 24-gauge or thicker metal. Then buy the largest sign you can afford. Small signs can get lost on a large wall."

Many catalogs and online postings refer to reproduction signs as "fantasy" signs. They may look as if they were taken right off the set of *The Grapes of Wrath*, but they don't duplicate vintage signs. Instead, they incorporate original elements, styles, fonts, and logos, all put together in an authentic-looking manner, even though no original of that exact design ever existed.

Take the word "fantasy" a step further, and you end up with tin signs looking like a 1950s ad for Marilyn Monroe or Elvis. (Hollywood fantasy signs proliferate.) These aren't intended to duplicate originals at all, but rather to pay homage to the period using a pop-culture icon. 

Written by **A.J. Hamler**

## SIGN ON

Try these sources for signs and man-cave decorations:

**Retro Planet.** Reproduction tin and porcelain metal signs in 50 categories; [retroplanet.com](http://retroplanet.com).

**Garage Art.** Vintage and reproduction automobilia and petrolinia; [garageart.com](http://garageart.com).

**English Antique Imports.** Antique English pub signs; [englishantiqueimports.com](http://englishantiqueimports.com).

**The Art Factory.** Prefabricated reproduction signs from filling stations, soda fountains, saloons, and drive-ins; [artfactory.com](http://artfactory.com).





A restored 1940s Coca-Cola Vendo 39 rotating-drum machine dispenses glass Coke bottles for 10 cents.

Above: Sixteen-foot walls allow Craig to pack his garage condo with memorabilia. He stores a 24' car trailer and auto parts in an adjoining condo space. Blue service doors provide walkthrough access.

Right: A custom pub table and bar stools feature vintage artwork of woodies and hot rods.







Craig displays memorabilia—cool old car parts, artifacts, and hundreds of die-cast cars—in five glass retail display cases he picked up at auctions, sales, and through craigslist.org.

# Collector's dream space

No room at home? Get yourself an off-site playground.

**G**arage condos, offering private ownership of storage units, have become popular in many parts of the U.S. In regions where few homeowners have basements, packrats, such as Craig Dayton, especially value ownership of cavernous spaces for collectibles.

Craig consolidated his collection of cars and tools—previously stored in four rental units—into two spacious 26×44' garage condos. (He stores a car trailer and parts in an adjoining condo.) The garage community utilizes 5-ton air conditioners and an insulated roof and walls to fight off the Arizona heat.

Before moving cars and tools into the condo, Craig applied a 100-percent epoxy coating to the floor. Then he began arranging automobilia and petrolinia (car

and gas station) signs on the 16' high corrugated-metal walls. Everything in Craig's condo has a story—whether a terrific eBay steal or how he synchronized the converted traffic lights.

Along the way, Craig invited his car buddies and spouses over for a party. "We had so much fun," Craig recalls, "that we hosted a sleep-over for my daughter and her high school club. It was perfect—they could play their music as loud as they wanted without disturbing any neighbors."

When it's party time, Craig rolls his '57 Chevy and '70 Oldsmobile 442 convertible into the driveway and sets up vintage and reproduction tables and chairs—enough to comfortably entertain 57 guests—across the condo floor. ♀

## A community of garages

Stefanie McDaniel markets garage condos in Arizona for GarageTown USA, which operates in seven western states. "We attract a lot of car enthusiasts," Stefanie says. "It seems like there's a car-club meeting here every weekend. And if not, there's a party."

"I'd describe our typical buyer in Arizona as someone who has run out of garage space at home. They can't imagine moving but they don't want to sell their cars, RVs, or boats. This is a good fit and a great lifestyle for like-minded guys."

Benefits for owners:

- Private ownership
- First purchaser can finish the unit to his own specifications. Some add car lifts; others build a mezzanine for entertaining.
- Plumbing and wastewater stubbed to most units
- Fire-suppression sprinkler systems
- 14' or taller overhead doors
- Paved roads
- Association fees (typically under \$100/month) cover security and other shared expenses.

In Craig's cluster of garages, a common area includes restrooms. Some other garage condos could include showers, party rooms with kitchens and entertaining spaces.

Units range in size (depending on the developer and region) from 13×25' to 28×80'. In some locales, prices start at \$39,000.

We're in the hunt for more outstanding man caves. Visit [woodmagazine.com/mancaves](http://woodmagazine.com/mancaves) for details on submitting your favorite retreat for possible publication.





# Backyard stay-cation retreat

Leon Larson firmly believes that memorable meals with family and friends don't require reservations, a coat and tie, or even windshield time. He'll stick with backyard entertaining any day of the week.

**W**here there's smoke, there's fire. And probably an incredible meal and party, too, if you're friends with Leon and Mary Larson.

That's pretty much the script since this small-town veterinarian built a backyard fire platform. And just like neighborhoods where an open garage door signals that it's okay to stop in, "If you see smoke, come on over," says Leon. "It's just part of living in a small town. We're pretty friendly—just drop by."

Four years ago, the Larsons asked a college friend and landscape architect, Dave Yakish, to design a fire platform—

something elevated a foot or so off the ground that didn't require as much leaning over as a fire pit. A nice side benefit: The varied heights created places to sit or warm tired feet near the fire.

The Larsons liked the design, *next page*, so much that they found themselves adding an outdoor kitchen and doubling the patio size the next year. It was almost like drawing moths to fire except with a happier ending—great food and exceptional company with friends.

"We never dreamed we'd use the fire platform as much as we do," Leon says.

*continued on page 76*





While T-bone steaks cook on a swinging grill, Leon uses tongs to transfer hot ashes to the Dutch-oven lid for uniform cooking of Mary's dinner rolls. The chain-link design allows Leon to easily adjust the grill height.

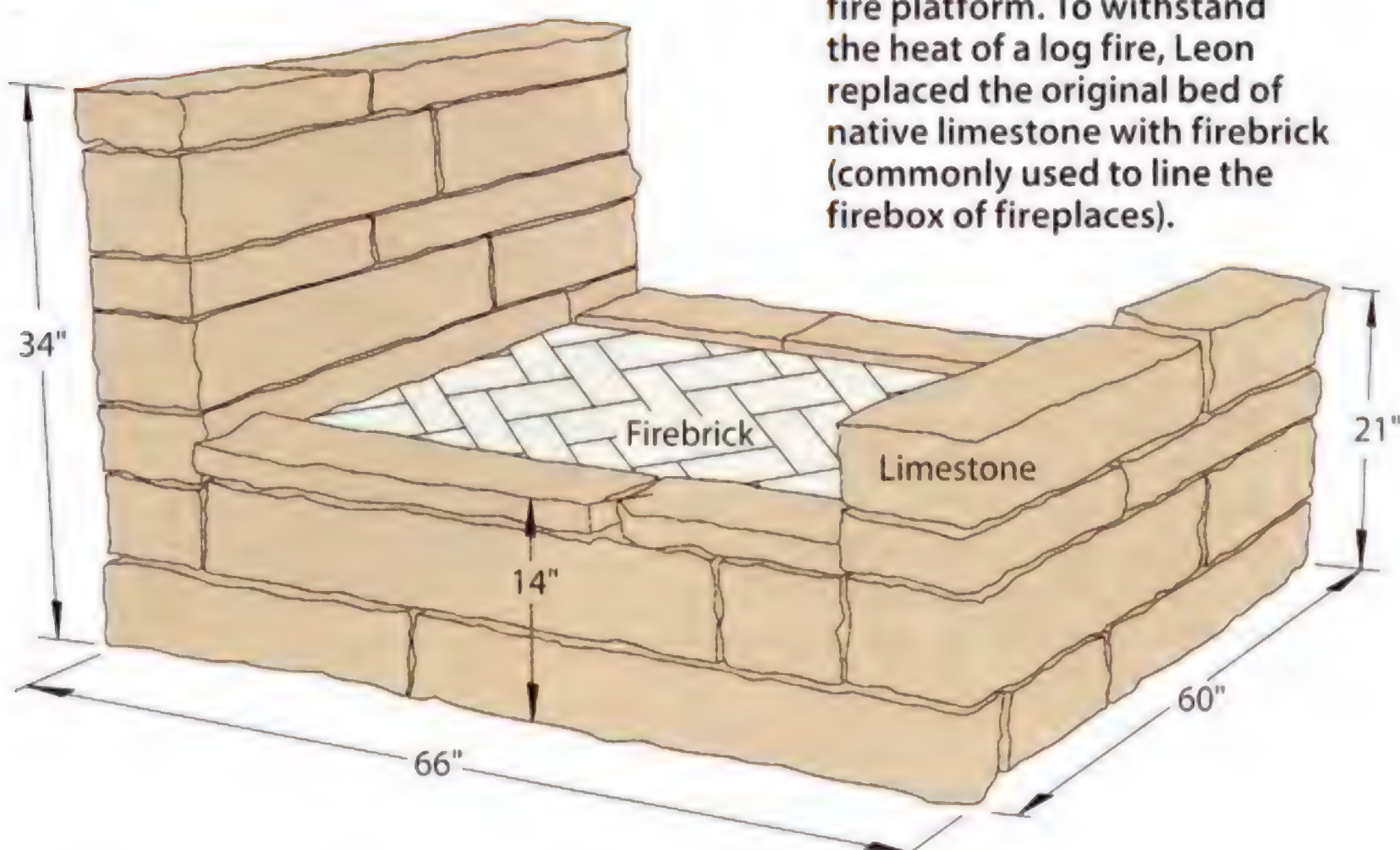
## THE TOOLS



When tending the fire, Leon can grab one of six tools hanging on a 36"-high wall behind the fire platform.

An outdoor kitchen and fire platform stand just a few steps from the Larsons' back door and screened-in porch. "We practically live out here in the summer," Leon says. "We even dash out during the winter to grill."

Most outdoor entertaining at the Larson home revolves around Leon's limestone fire platform. To withstand the heat of a log fire, Leon replaced the original bed of native limestone with firebrick (commonly used to line the firebox of fireplaces).







Mary and Leon set up drinks and appetizers for a weekday barbecue at their home. Leon uses the apartment-size refrigerator (foreground) for beer; the space is large enough for a kegerator if he decides to upgrade. Mary found the decorative 50"-long spatula (at top) at Pier 1 Imports (about \$50).

*continued from page 74*

"Between the patio and our screened-in porch, we're probably eating 10 meals a week outdoors in the summer. This is our version of camping—right in our own backyard."

Whether he's grilling to-die-for steaks or pork chops for a potluck with four other couples, hosting a wedding reception for 150, or opening the doors for an all-church picnic, Leon is right at home cooking over an open fire. (See one favorite recipe at *right*.) "I do all of the grilling," Leon says, "but it helps that Mary loves to plan and organize parties."

"I work indoors all day," Mary explains. "So I try to spend all the time I can outside. We don't

## LEON'S BISTECCA ALLA FIORENTINA

A slow-cooking log fire, a healthy measure of smoke, and a simple rub of garlic, olive oil, and black pepper are key ingredients to *Bistecca alla Fiorentina* (Beefsteak Florentine), a Tuscan-style recipe shared by an Italian exchange student the Larsons hosted.

1. Leon builds a log fire from seasoned applewood.
2. After about 30 minutes, the bed of coals is nearly ready.
3. Leon arranges four 2½"-thick T-bones on a 24"-diameter swinging grill about 6" above the smoldering fire.
4. After searing the steaks, Leon leans them against each other, which allows the center portions of the thick steaks to slowly cook up through the T-bone. He stands the steaks on end for about 15 minutes.








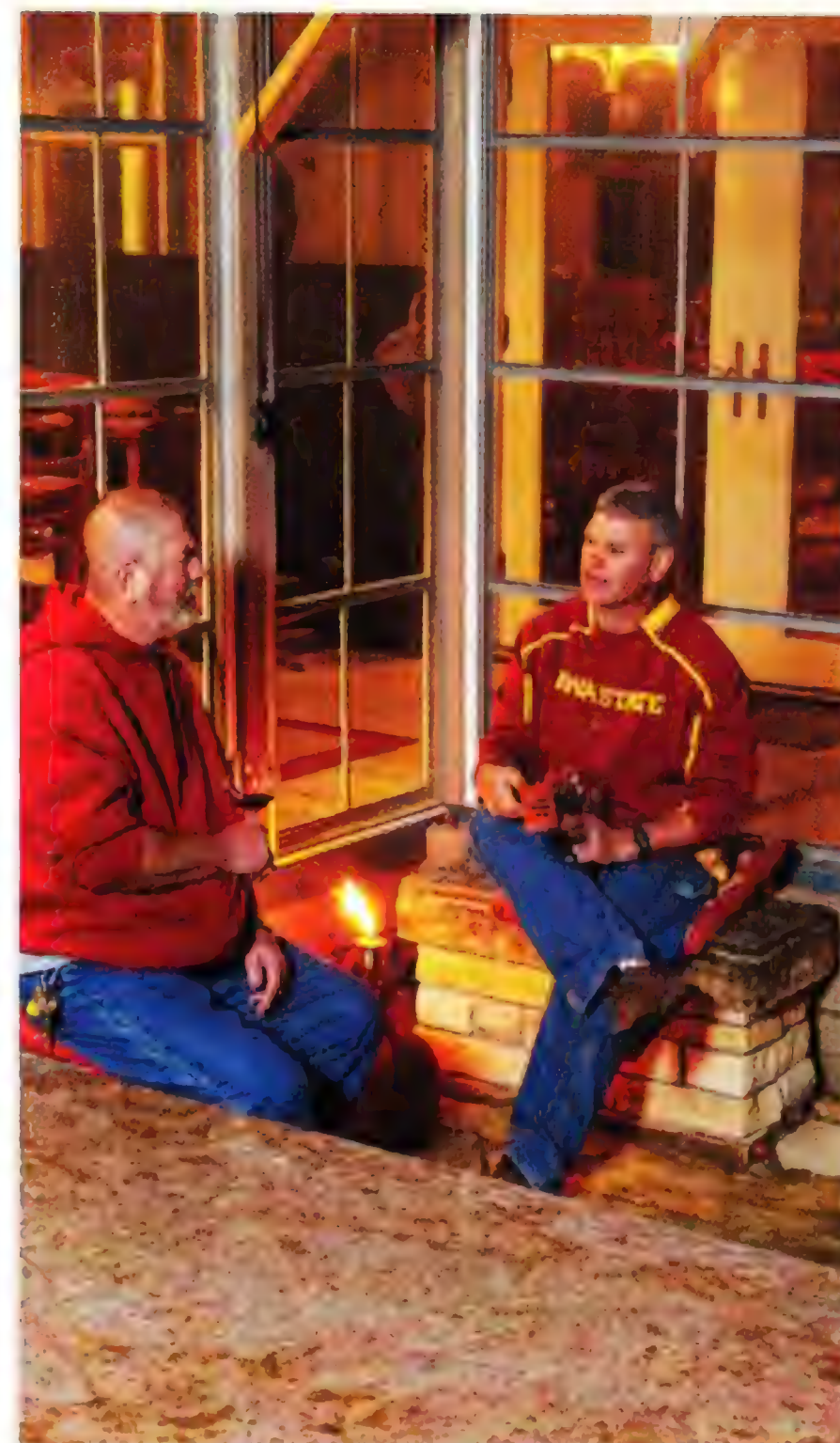
A 33"-wide Weber Summit 420 portable grill slides into a 30"-deep red Montana granite countertop. "We shopped quite a bit for grills before building our outdoor kitchen," Leon says. "The built-in units have a lot of nice features, but the roll-in propane grill we selected gives us more flexibility if we ever need to repair or replace it. And it cost less than most built-in grills."

eat out very often—I think we can do just as good of a job here as any restaurant."

Instead of spending money on a vacation, the Larsons have plans to further improve their stay-cation retreat. Below the granite countertop, Leon reserved a 24x36" space in the limestone base for shelves to accommodate party supplies and serving dishes. "Even though I like the looks of the sunscreen

above the Weber grill, it doesn't function as well as it should," Leon adds. "Depending on the angle of the sun and the time of the day, it's really not big enough. So, we've got to re-engineer that. And one more project: I've got the perfect place for a kegerator."

Maybe over beers, Leon and friends can work out a better solution to improve that sunscreen. 



A gathering area near the screened-in porch serves as a sheltered conversation pit for Leon and his friend Ken Hald, left. Leon added the 14"D x36"W x19"H limestone benches when he and Mary expanded the patio. Throw pillows soften the seating. "There's nothing to maintaining these benches," Leon says, "plus they're at a great location for the chef."







## Walt's touchdown tavern

What's a higher use for a 18½x19½' garage: car parking or pigskin party room? Buddies agree that Walt scored big with this man cave dedicated to football, fun, and friends.


**W**alt Chilcott's year breaks down into two seasons: football and waiting for football.

On any fall weekend, you'll find a dozen or so football fanatics gathered in a two-car garage converted into Walt's Touchdown Tavern, where six flat-screens dominate one wall.

After disabling the overhead garage door, Walt built his Wall-o'-Screens about 12" or so in front of the two-car garage door. "Behind this wall," Walt says, "my son wired AC outlets for each TV and then added HDMI connectors that feed to

an opening under the shuffleboard table. I control the TVs via Wi-Fi with an iPad app—it operates like a remote control.

"Every weekend, I extended an open invitation to watch Saturday college games and then the NFL Sunday Ticket. We select games based on what players my friends are tracking for their fantasy football teams.

"I have all the pieces of garage-door track," Walt says, "if I ever sold this place and someone wanted to convert it into a garage. But I think if I showed them the tavern, it would stay a tavern." 





Walt's wall includes a 58" plasma 3D TV, two 40" LEDs, and three 22" LEDs. To hang the mini helmets above the screens, Walt bent cup hooks to fit through each helmet's ear hole.

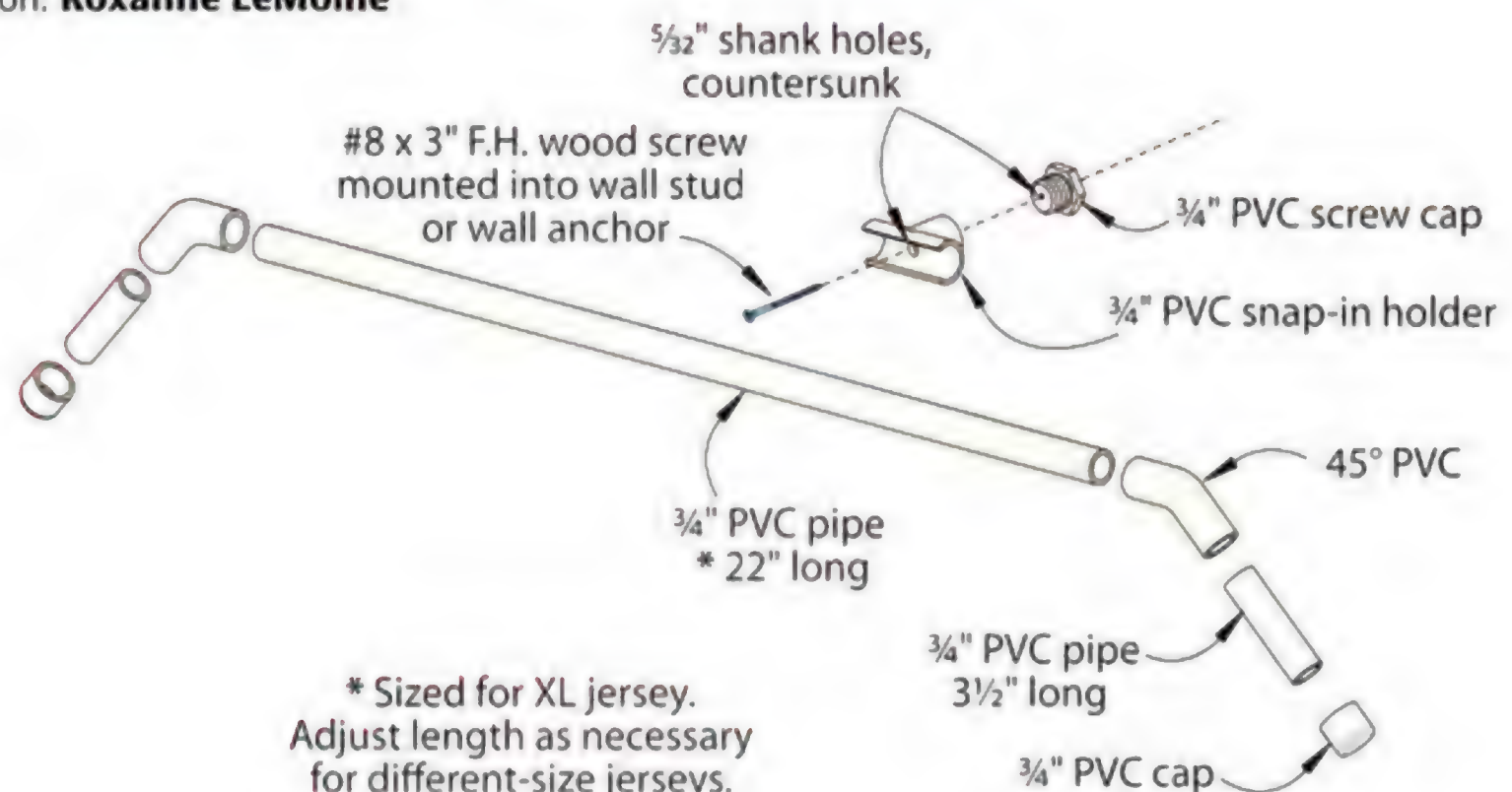


Above: A Dallas Cowboys rug dominates Walt's tavern floor. He purchased the rug (10'9" x 13'2") on amazon.com. You can find this and smaller rugs for all NFL teams and many college teams on Web sites. Walt, wearing the gray #9 jersey, is commissioner of a 40-team fantasy football league in Florida.



Left: Walt displays Dallas Cowboys jerseys in his Touchdown Tavern on inexpensive hangers (below) assembled from PVC plumbing parts. "These are really simple to build," Walt says, "and a lot less expensive than framing an NFL jersey."

Photos: Jill Wayman  
Illustration: Roxanne LeMoine



Steve, Susan, and Summer Peyer surprised their friend Walt at Christmas with a set of custom coasters for the Touchdown Tavern. You can find similar suppliers online; one source is myownlabels.com (about \$1 apiece).





## Paul's Colorado can cave

No one has written a song about 99 cans of beer on the wall. That number doesn't begin to describe this family collection dating back more than 40 years—and counting.

**T**o Paul Rice's buddies, it's the Can Cave. But when Paul swings open the door to this 22x30' outbuilding, he sees his Wisconsin roots.

"My dad, brothers, and I originally started this beer-can collection in the 70s," Paul recalls, "when it was a big fad in Wisconsin. After we kids moved away, my dad and his buddies continued to add to the collection over the next few decades.

"A few years ago, I drove back to Wisconsin to bring the collection to Colorado for my new man cave. I think Mom was pleased as heck to get rid of them. But they mean a lot to me.

"My dad's buddies came over to give the collection a farewell salute. Funny, out of all those 2,000 or so cans, they seem to recall when and where they enjoyed every beer." 🍺





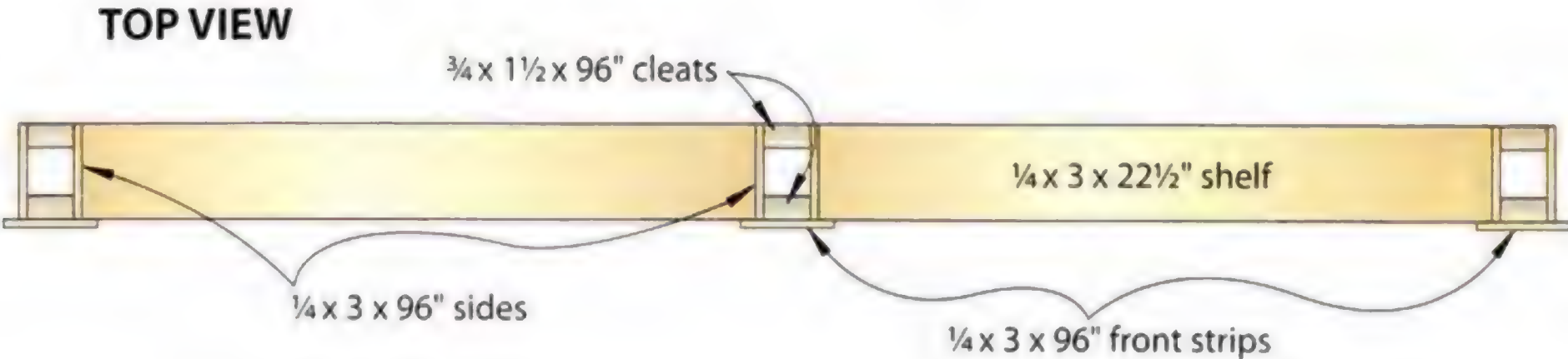
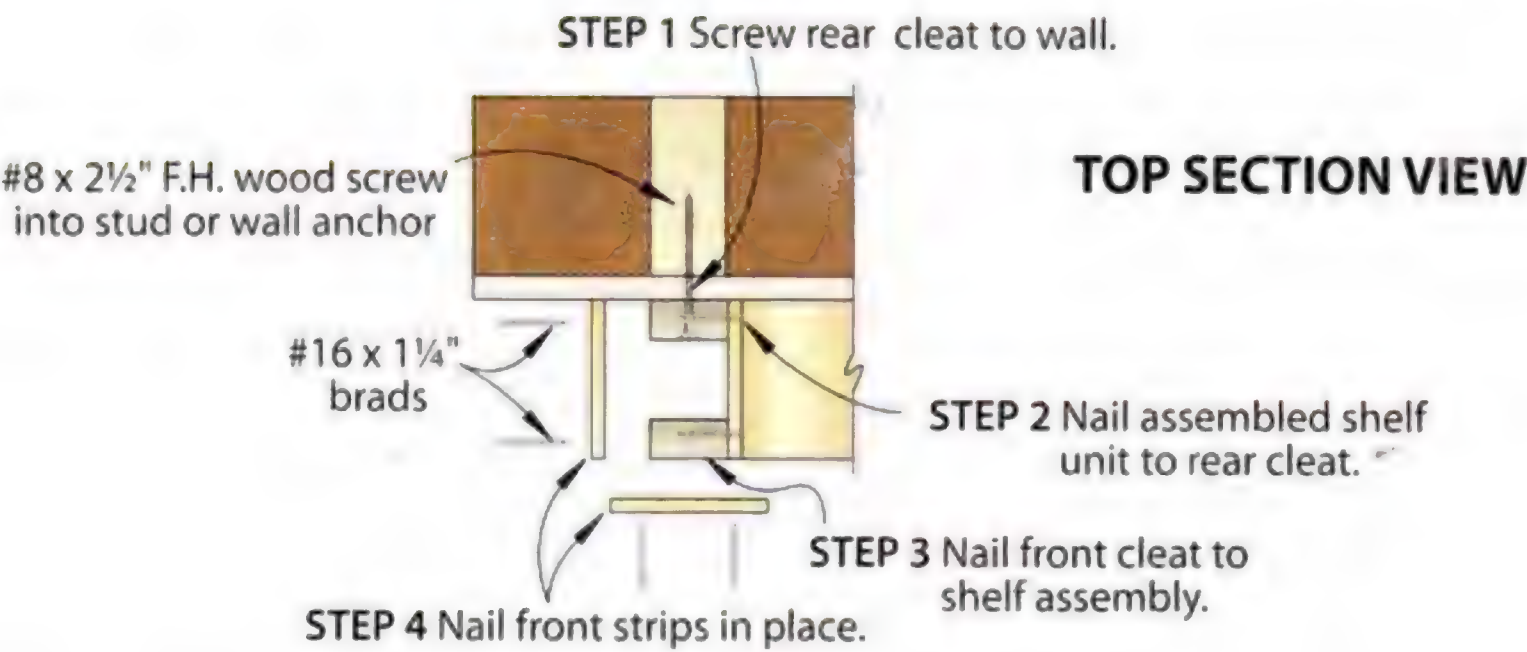
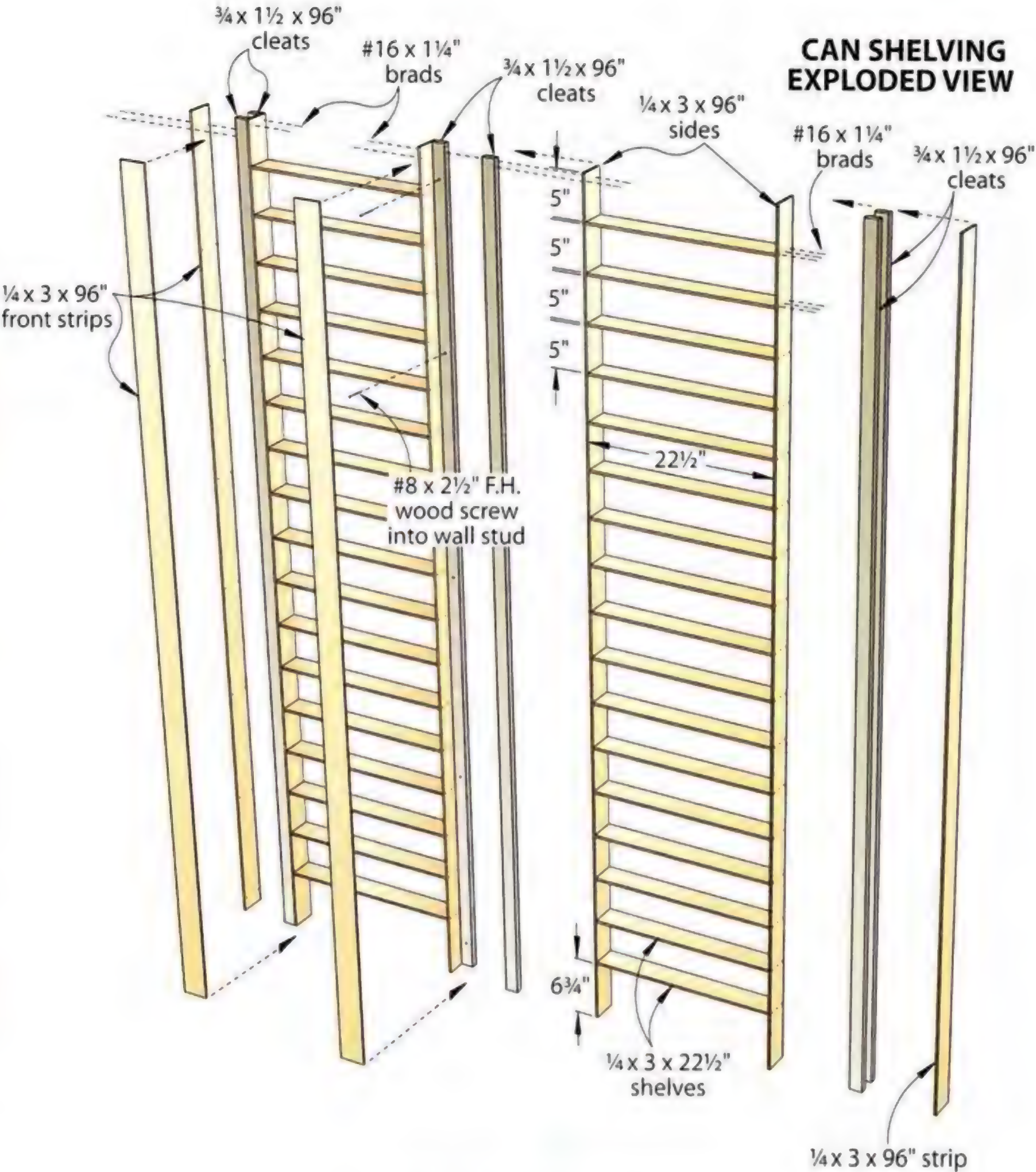
Previous page top: Paul Rice, left, and Randy Winkler talk football at a bar table Paul built from salvage lumber.

Below: Paul incorporated a discarded canoe bow into a shrine honoring Green Bay Packer great Ray Nitschke.



Paul paid a buck for two cases of colorful Grolsch bottles. "I put some of them in a fixed window," he says, "and my wife said it looks like stained glass in the church of beer."

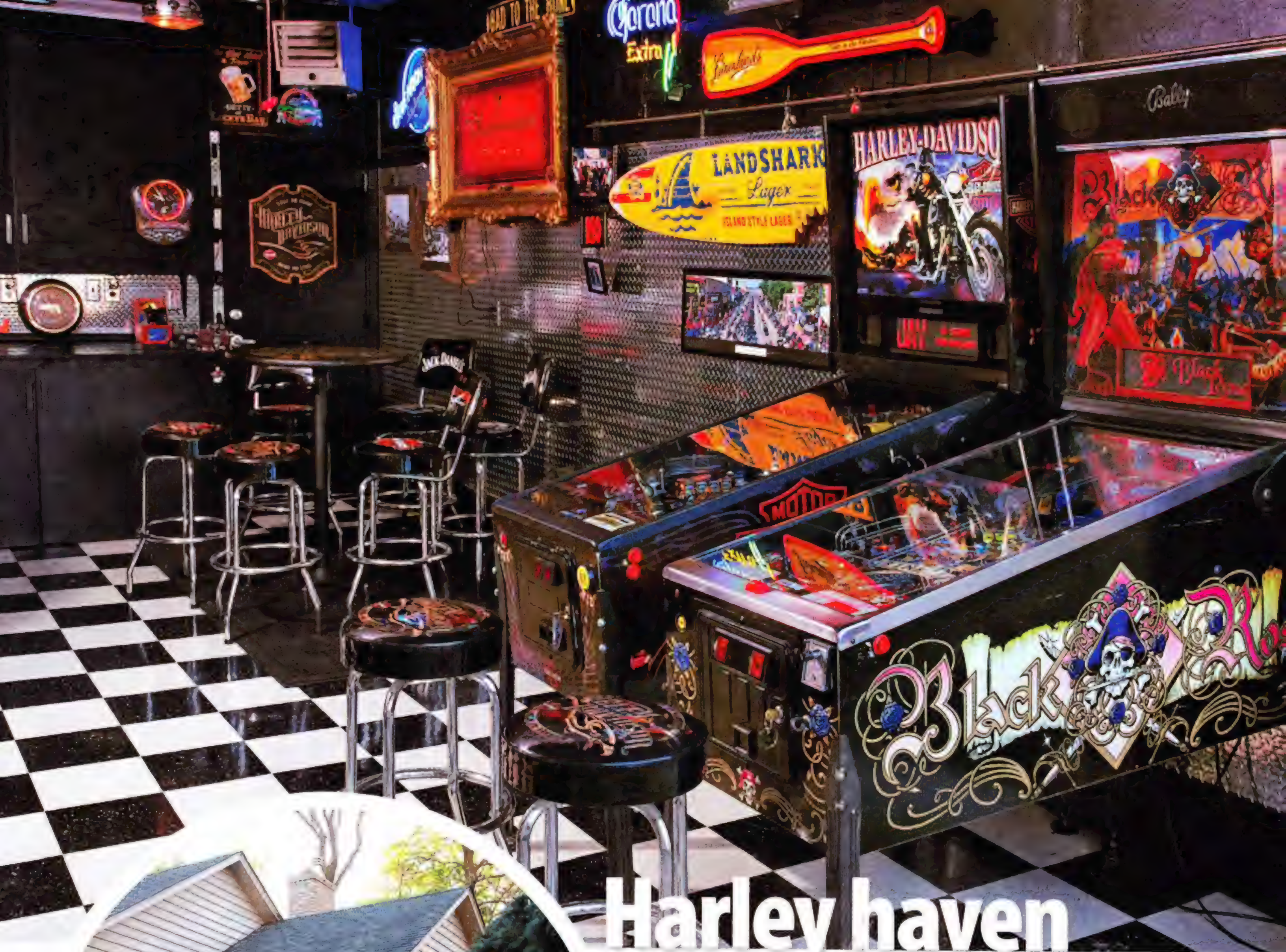
Previous page bottom: Paul and Brian Diaz celebrate the end of another week at a table picked up at a yard sale (\$10). Paul's Can Cave now includes more than 2,000 cans, all neatly displayed on wall-hugging shelves he designed. (See drawings at right.) He also created the football field on an 18"D x 36"W x 64"H five-drawer filing cabinet. "After I sprayed it Packer green," Paul says, "I masked off the field and stenciled the yard markers. If you look closely you'll see three hash marks when there should be four. It's okay—most of the guys that come over are Denver Broncos fans, and they can't count anyway."



Photos: Kelley Cox  
Illustrations: Roxanne LeMoine

We're in the hunt for more outstanding man caves. Visit [woodmagazine.com/mancaves](http://woodmagazine.com/mancaves) for details on submitting your favorite retreat for possible publication.





## Harley haven



Man cave or party place—take your pick. For Hog-loving friends, it's the place to gather before or after a ride. It's also the best danged party room on the *cul-de-sac*.

**W**hen Christmas rolls around, Jackson Hall can rest easily, assured there won't be any ugly ties or tacky sweaters under the tree with his name on the tag. This dad makes shopping easy: Something for the man cave will be perfect.

Like other projects that got wonderfully out of control, this cave started out five years ago as an upgrade to the garage floor in preparation for a high school graduation party. Jackson poured a lot of sweat equity into grinding off a cheap epoxy covering; then he recruited his wife, Shelley, to help lay the vinyl composition tile (VCT). "We got a huge response from the high school kids," Jackson recalls. "They'd never seen anything like this. And pretty soon, we thought of more ways to improve the garage. We've had a lot of fun with every improvement."

Fast forward to today. From charity motorcycle rides of 20–30 riders, to office parties, to Super Bowl parties, the Hall cave has become *the* default place to meet. "We've had tons of kids here. Our

*continued on page 84*





Jackson dressed up his garage with a reproduction Fat Tire neon sign (Craig's List purchase; about \$40). He keeps the air moving on summer days with a Harley-Davidson ceiling fan (purchased off-season for about \$175 at a dealer's year-end sale).



Read about Jackson's homemade Harley-Davidson mirror on page 84.



Above: Instead of resurfacing poorly prepared drywall in his garage, Jackson lined all the walls with 4x6' sheets of 1/8"-thick diamond-plate steel. (He attached the panels with 1 1/2"-long stainless-steel screws.) Jackson spent about \$1,000 on materials.

Right: "We've got a fresh batch of popcorn!" Jackson tells friends parking their bikes outside his Harley-themed playroom. Reproduction machines like this sell for about \$300 new; Jackson found his at a furniture-store tent sale for \$99.



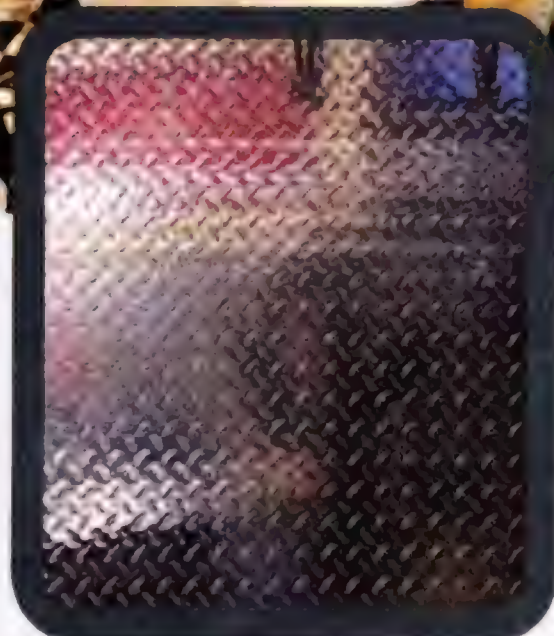
With Jackson watching, Shelley Hall rings up another score on the Harley-Davidson pinball machine (Craig's List purchase, about \$1,500), one of two classic games in the Hall man cave. Jackson and his brother maintain both machines.



## YOU CAN DO IT




Even though it's Jackson's man cave, his wife, Shelley, played a big role in its creation. She painted most of the trim that frames the 4x6' diamond-plate steel panels lining the two-car garage and one-car man cave. The shiny panels reflect neon signs and warm up the space. And every spring, Shelley spends about two hours stripping the vinyl composition tile (VCT) and applying four coats of sealer and two or three coats of wax. (She prefers ZEP products.) Although Armstrong doesn't recommend this product for garage floors, the Halls' VCT tile has survived five brutal Minnesota winters and looks like it's fresh from the factory carton.



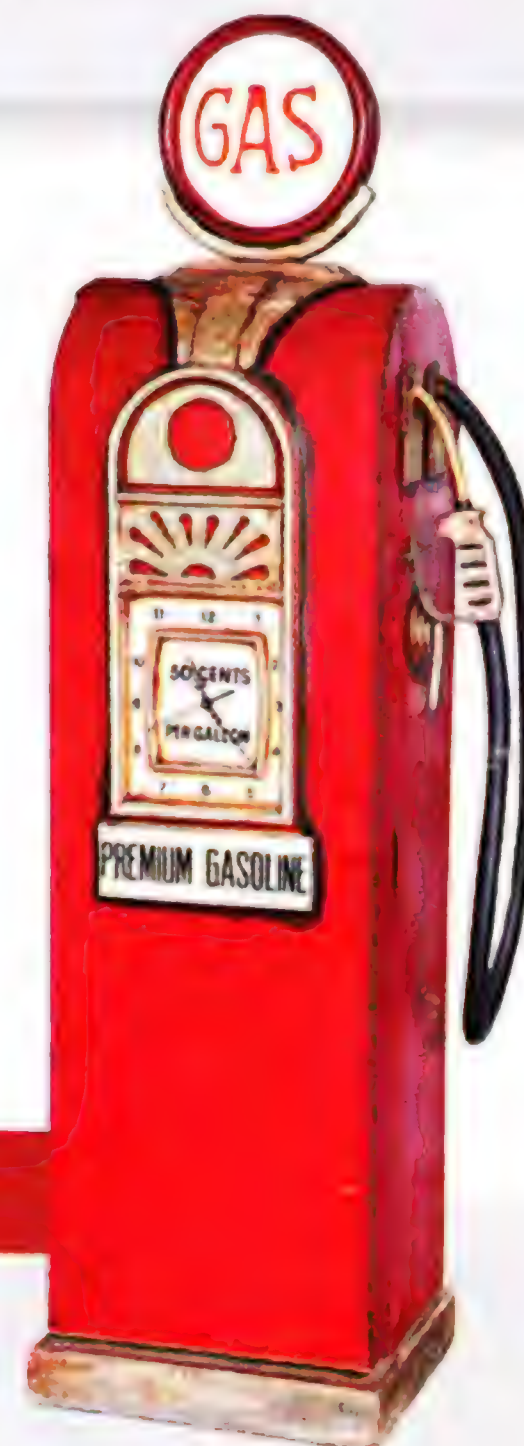
*continued from page 82*

daughters and their friends have told us this place is a lot more fun than going out to a bar—and less expensive. We've got plenty of neon signs—just like a bar. Plus, we now have a ping-pong table, Pac-Man game, dart board, big-screen TV, and plenty of space."

Two pinball machines see lots of action—regardless of the age or makeup of the crowd. Jackson and his brother, Steve, *right*, rely on online resources to keep the '70s- and '80s-vintage machines in top working order. "I swear there must be pinball junkies in every state and most big cities, too," Jackson says. "If we post a question at pinside.com, we'll get five replies—all good!—the same night. Plus it's easy to get parts (pinballlife.com) shipped the next day. It's all old-time circuitry and really a lot of fun to work on." 

## EN-TIRE-LY POSSIBLE

With just an evening's effort, Jackson and his buddy Mark Potter (see pages 16–19) created inexpensive wall mirrors for each of their Harley-themed garages. Using a metal-cutting 10" blade mounted in Mark's tablesaw, they slowly rotated a used tire from Jackson's Harley Softail through the blade (too scary to try again). The project raised a cloud of blue smoke and a coating of fine rubber dust all over Mark's garage, but they were rewarded with a pair of wall decorations for their effort. A round mirror from a home center (about \$25) completed the project.



## REPURPOSED PUMP



You gotta love a brother like Steve Hall, *left*, who pitches in to help polish his brother's 2002 Harley-Davidson Heritage Springer. Jackson stores his polishing products and helmets in a hinged 16x18x74" wooden cabinet *above* tricked out like a classic gas pump (originally used for retail display).



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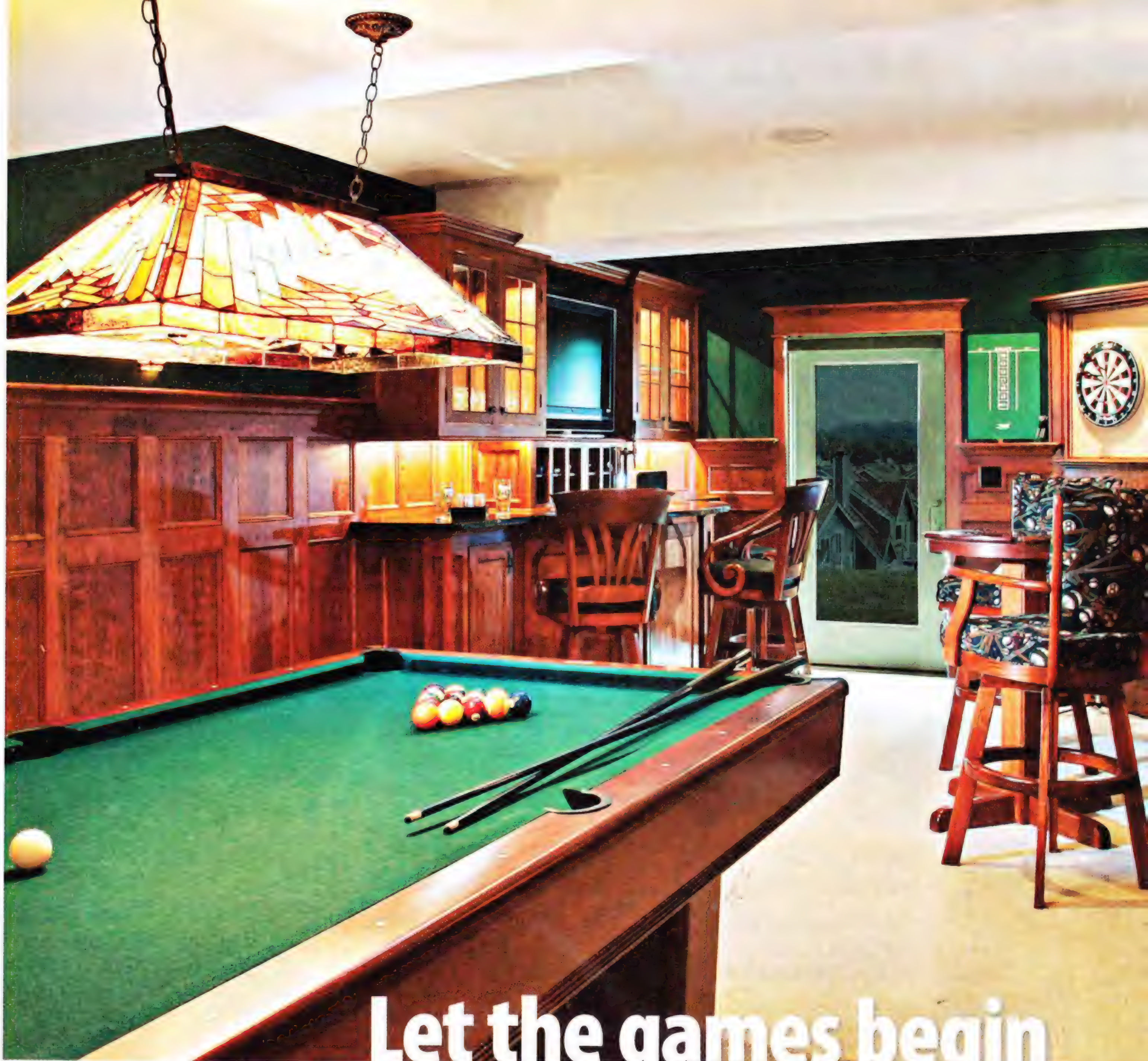
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## Let the games begin

Whether you barely have space for a dartboard or you plan your entire game room around a pool table, check out the experts' winning game strategies for your man cave. Now let's have some fun!

**I**n many ways, setting up a man cave is like transporting your favorite pub into your own home. All the best traits are there: attractive décor, refreshing beverages, comfortable furniture and, more often than not, sports on television. But the contest on the big screen isn't the only game in town—rather than merely sit there, engage in some gamesmanship of your own.

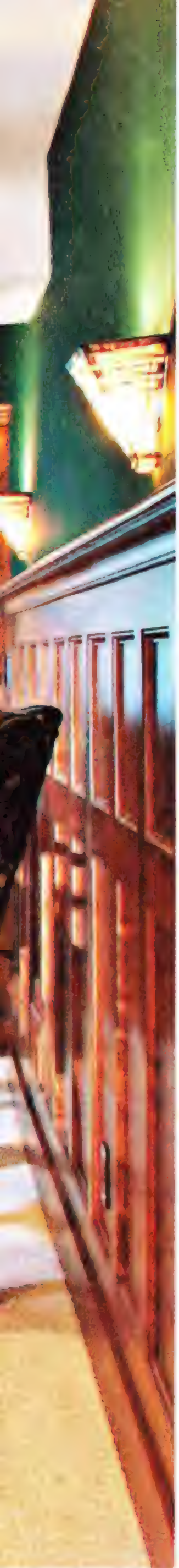
Depending on your interests, budget, and available space, you'll find numerous options, from a dartboard that takes up virtually no room when not in use, to a regulation-size pool table that's the centerpiece of the room.

### Buying strategies

Before you shop, measure all door openings to ensure any new equipment will fit. Ditto for stairwells, too, especially ones that turn corners. The components of a 22'-long shuffleboard table may easily fit through the door, but will they turn those corners?

Prices for game equipment vary greatly, depending on age and condition. Careful shopping can lead to a used pool table, pinball machine, or poker table at a tidy savings over new. Check your newspaper's classified ads for bargains, as well as online sites such as eBay and Craig's List. However, be





Professional hockey player Mark Parrish had a custom cherry cabinet (*left, below*) created for a traditional bristle dartboard as part of a complete game room. By Brian Grabski of Designed & Made of Minneapolis.



The game room on the *previous page* includes a pool table, entertainment system, full bar, dartboard, and a bistro-style table and chairs for enjoying snacks while gaming. By Teakwood Builders Inc. of Saratoga Springs, New York.



This all-electronic dartboard uses soft-tip darts, and features a 19" flat-screen monitor, as well as several programmed game modes. Standing 27" wide and 84" high, the "Galaxy II.5" by Arachnid Inc. sells for around \$3,500.

aware that those sellers may not ship or deliver, which can negate any savings, so keep your online searches local.

Be sure to check local auction listings. When bars and restaurants go out of business, their game machines and tables often go on the block. If there's a hotel and restaurant liquidator nearby, check it out, as well.

New equipment also runs the price gamut. To keep the price low, manufacturers of some kid-friendly versions of parlor games shave corners on materials and construction. That could adversely affect adult game play and enjoyment. Remember that higher price tags often

reflect materials and craftsmanship that go into the appearance of the unit, rather than the functionality. Intricate carving, hand-tooled leather, and exotic woods all come at a price.

OK, ready to play? Time to name your game. Or, shall we say, games?

### Darting about

A used dartboard is likely to be pretty well abused—after all, it's spent its entire life being punctured by pointed objects. So don't buy used. A new, wall-hung fiberboard target (often called "bristle") fetches \$50 or less at a billiard supplier or retail store. Even so-called professional

dartboards (without a nice case) sell for less than \$100.

A well-built dartboard cabinet probably costs more than the board itself, ranging from \$90 for a simple pine enclosure on up to \$200 or more for a floor-standing model. Good steel-tipped darts range from \$30 to \$60 (set of three), but aficionados could find themselves paying as much as \$150 for really fancy sets.

An electronic dart game uses soft-tipped darts that penetrate perforations on the target's surface and records scores automatically. Wall-hung models start around \$100, but a professional machine (*above*), like those you'd play at the neighborhood tavern, take up about as much space as a wide grandfather clock and run \$1,000 to \$4,000. These machines are relative newcomers for the home market, so you're not likely to find nearly as many used models as with other parlor games.

### Poker possibilities

There are all sorts of poker tables out there, but watch out: Some sellers on online sites could be bluffing. They'll show you a picture of a nice tabletop, but not the legs. Why? Because there aren't any. A typical square folding card





*Far left: The traditional style of the felt-covered hexagonal poker table complements a custom bar in a man cave.*

*Left: If you're feeling handy, build this poker/game table from plans available at [woodmagazine.com/gametable](http://woodmagazine.com/gametable).*

table that you can buy at a department store probably isn't how you want to furnish your man cave, but in a pinch, you could slap a \$30-to-\$80 green-felt "topper" on it. An entry-level felt table mounted on plywood or particleboard with attached folding legs sells in the \$100 to \$200 range.

Like any other pieces of furniture, dedicated poker tables range from inexpensive ones made from laminate over particleboard, to expensive models crafted of solid wood. The simplest and least expensive (\$240 range) are octagonal and covered in green felt. Adding a wooden border with a tray for poker-chip slots and cup holders bumps your purchase into the \$400-to-\$600 range. Expect to pay \$1,500 and up for models built like fine dining-room furniture. And for an oblong Texas Hold 'Em-style table, prepare to ante up a grand or two—even more if it features a padded leather armrest.

## Pool party

When shopping for a pool table, consider the size of your room first. About

80 percent of new tables sold are 4×8'. A full-size tournament-style table is at least 9' long. Even "compact" pool tables (sometimes called bar tables) take up 3½×7'. In all cases, allow for 5' on all sides for comfortable cue-stick space without obstructions.

A top-quality pool table has thick slate beneath the colorful felt, so even without a beefy frame it'll be heavy. That could explain the nearly ubiquitous two-word phrase found in online ads: "Pickup only." The weight could also explain why so many used slate-top 7-footers can be had for only around \$500. A new 7' or 8' table with minimal ornamentation will lighten your pocket by a grand or more. A big, ornate, top-quality pool table can easily set you back \$5,000 to \$7,000.

If you do buy a used table, spend extra bucks to have it set up by a pro. Slate tops generally come in three pieces that must be perfectly level and flat. The slab alignment requires skill and experience to get right. Plan to pay about \$350 for professional delivery and setup. A well-used table requiring new felt and cushions could set you back \$250 to \$500.

Buying new has a couple of advantages. First, professional installation often comes with the purchase. Customization is another benefit of buying a new table. If your man cave reflects your devotion to a particular sports team, for example, you can order your table with custom felt sporting the color—or even the logo—of your favorite squad air-brushed into the felt.





Left: A rustic-style pool table takes center stage in a game room designed by Teakwood Builders Inc. of Saratoga Springs, New York.



Belmont, a U.S.-made 8' table, sells for about \$3,000. It's one of the most popular models offered by Olhausen Billiards of Portland, Tennessee.

When planning space for a pool table, be sure to include at least 5 feet of space around each side of the table.



This shuffleboard table with a 3"-thick maple top has a rock-hard epoxy playing surface that requires less maintenance than varnish on classic tables. Olhausen Billiards makes this York model in lengths from 9' to 22'; the 14' table above lists for about \$4,200. A similar-length table with a playing surface of plastic laminate over 3/4"-thick plywood retails for about \$2,100.



A different style of shuffleboard—playing a rebound shot off a bumper—requires just 4x7' floor space. The Summit table above from JRG Enterprises sells for about \$3,000 (solid-maple playing surface). Less-expensive versions of the same table sell for as little as \$1,500 with a medium-density fiberboard (MDF) playing surface and no electronic scoreboard.

Older doesn't always mean cheaper, especially when it comes to antique tables. A beautifully crafted table from the late 19th or early 20th century can easily command \$8,000 to \$20,000.

## Shuffle on down

There's one multilegged monster that requires serious space in your man cave, but offers some serious fun: a shuffleboard table. Because it doesn't require any extraordinary skill, it's a game the whole family can play together. Most popular in the 1940s and '50s, the game is in the midst of a revival, particularly in home settings. "Shuffleboard is back from the dead," says Joel Horn, manager of Mueller Recreational Products, a retailer in Clive, Iowa. "For many, the game is less

intimidating than pool. And the new tables require little maintenance."

Todd McClure, CEO of McClure Tables Inc., of Jenison, Michigan, attributes the resurgence to a number of factors. "Newer home designs often include a bonus room that is 20' by 15' or 18'," he says. "The husband would love a pool table but the wife wants a home theater. A pool table would take up all the space in the middle of the room. But a shuffleboard table can be put against one wall or behind home theater seats, and still have the home theater room."

Shuffleboard tables typically range from 12' to 22' in length (although there are shorter ones), and you just need a few feet of clearance on both ends to give the players room to maneuver. The strongest tabletops consist of solid



maple, face-glued with edge grain facing up. Cheaper tables use less-expensive wood, with planks arranged on the flat.

The playfields on a professional table measure 3" thick and 20" wide; cheaper tables may be half as thick and only 15" or 16" wide. A new bargain table sells for \$800 to \$900, while prices for a heavy-duty table made by one of the major manufacturers range from \$4,000 for a 9' model up to \$6,700 for a 22-footer. Premium tables soar well into five figures. Used tables prove elusive, and online ads generally carry the same caveat as for pool tables: "Pickup only."

## For a twist, try Foosball

This game, based upon soccer, spread to America following World War II, brought home by returning GIs. Foosball enjoyed its heyday in the 1970s, but now has new fans.

In Foosball, the action takes place inside the table, a wooden box generally about 3x5'. Across the width of the table, you'll find eight rods fit with pins to represent soccer players.

New, high-quality Foosball games sell in the range of \$800 to \$1,500, while a few bare-bones units constructed from plywood or medium-density fiberboard (MDF) go for \$300 to \$400. A check of [craigslist.org](http://craigslist.org) or the classifieds could net you a good used model for as little as \$200 to \$300.

## Hit the "ice"

To simulate arena ice in an air-hockey table, air blows through thousands of tiny holes. This creates a practically frictionless cushion for the plastic air-hockey puck. Players use round, finger-grip mallets to knock the pucks into the goals.

Air-hockey tables come as long as 8' and sell new for \$800 to \$3,000; small models around 4' long sell in the \$300 to \$500 range. Lightweight plastic "kids" tables—which tend to be flimsy—go for

Although known more for bowling and billiards, Brunswick also makes top-quality air-hockey tables, like this "Wind Chill," a 7' table that sells for around \$650.

In this table-hockey game played with push rods similar to Foosball, lights flash and a horn sounds when you shoot the puck into the net. The 45¼x33¾" table includes a shatter-proof dome. Carrom Company; about \$1,000.



One goalie or three goalies for a tournament-style game? Take your pick when setting up the game on this 54"-long Foosball table. An inlaid solid-wood beam beneath the playfield strengthens the support for the play surface and helps ensure its flatness. Carrom Company; about \$600.







Above: "Jumping Jack," a 1970s game by Gottlieb, features a colorful back glass and plenty of drop targets.

Left: Jerry Porter of Classic Collectibles ([classiccollectibles4u.com](http://classiccollectibles4u.com)) spent about 40 hours restoring this 1970s "High Hand" machine by Gottlieb. He's restored pinball machines for more than 12 years. "I love the way Gottlieb machines sound," Jerry says.



Stern Pinball's "Iron Man" typifies today's high-tech machines, and features music and sound effects from the movie. The table sells for about \$4,600 new.

under \$150. Used air-hockey tables sell for \$200 to \$300.

A completely different hockey game, *previous page, top*, plays like a cousin to Foosball: players use rods to move their hockey squad about the board.

## Pinball wizardry

You'll find as many different styles and themes of pinball machines as there are man caves—everything from Elvis to Harley-Davidson, and *Star Trek* to *The Simpsons*. And with legions of dedicated pinball wizards repairing and restoring classic machines from the big names, such as Bally, Gottlieb, Stern, and Williams, product abounds. One restoration expert suggests looking at used pinball machines two ways: cosmetically and mechanically.

"Focus on cosmetics first," says Clay Harrell, who has repaired and restored pinball machines for 15 years. "If a game doesn't work, you can get it fixed. But bad cosmetics—like worn playing surfaces, nasty repainted cabinets, peeling

score glasses—those can be extremely difficult and expensive to rectify."


Prices for used games swing all over the map. You can pick up a 25- or 30-year-old machine in working condition for as little as a few hundred dollars, and it goes up from there. Clay has seen machines priced for \$100 to \$5,000 for the same title. If the graphics are considered particularly appealing, up goes the price. When the theme of the machine reflects something in popular culture (with emphasis on "popular"), the price jumps again.

Whatever the price, if you buy through eBay, craigslist.org, or other online seller, expect to pay another \$200 to \$300 for shipping, assuming the seller will ship. And then there's always the danger of not liking what you get. After all, you want to play with these things, not just admire them.

"Unless you know what you're doing, I would not suggest buying a game based on pictures only," Clay says. "That said, 'window-shopping' on eBay or online is

a good idea. But then go play the game you want to buy. Make sure it's really what you want, and that it works and plays the way you like."

You save shipping by buying locally, but Clay suggests putting that savings to use. He recommends adding \$200 to the price of any used pinball machine, and set it aside for repair. "Let's face it; you're flinging a 3-ounce steel ball at a bunch of wood, metal, and plastic parts. Something is going to break!"

Buying new assures you of getting a machine in top mechanical and cosmetic condition. These machines sport solid-state electronics, fancy score displays, ramps, and elaborate sound and playing rules. The going rate for those: generally \$4,000 to \$5,000. 

## WHAT'S NEW

"Today, Stern is the only pinball manufacturer of new games," says Ann Dever at Monkeys Arcade ([monkeysarcades.com](http://monkeysarcades.com)). "Some of their limited-edition versions have just 300 to 500 numbered machines—they sell out fast!"

Here are Stern's top-selling pinball games in production:

- 1 "AC/DC"
- 2 "Tron"
- 3 "Transformers"
- 4 "Iron Man"
- 5 "Avatar"



# Refine your space with walls

Now that you've collected ideas for your retreat, it's time for action! Follow along to build and finish walls for your new space.

## Locate and build a wall

**M**ost residential walls consist of vertical members (studs) that butt against horizontal members (plates) at the tops and bottoms. Although building a wall looks straightforward, it requires planning. For example, when you cover the framing with sheets of drywall or paneling, the seams between sheets must fall at the centers of studs. In addition, nailing surfaces must be provided for the sheets at all the corners (see page 95), and all framing members must be aligned along flat planes.

If the floor and ceiling are nearly level, simply preassemble a stud wall on the floor and tilt it into position. But if the floor and ceiling are uneven, or if you're working in tight quarters, build the wall in place, custom-cutting each stud to fit, and toenailing it to the top and bottom plates. (See pages 94–95 for details.)

Whichever approach you choose, consider how you attach your new wall to the ceiling. If the wall runs perpendicular to the ceiling joists, simply fasten the wall's top plate at every joist with two 16d nails. If the wall runs parallel to the joists, you have to place the wall under a joist or install blocking between joists so you can nail the top plate into solid material.

Learn the building basics on these and the following pages.

### GETTING THE STUD LENGTH CORRECT

Few things are more frustrating than building a stud wall only to find that your measurements were off and the wall is  $\frac{1}{4}$ " too tall. When that happens, the only thing you can do is lay the wall down, pull off one plate, remove the nails, cut all the studs, and nail the wall back together again.

To measure for stud length, nail together two scraps of 2x4 to represent the top and bottom plates. Set this double 2x4 on the floor, measure up to the joist, and subtract  $\frac{1}{4}$ " for shimming. Take measurements every few feet.



### 1 Mark the wall location

Begin by deciding exactly where the wall will go. Use a framing square and a chalk line to mark the wall's location on the floor. Using a level and a straight 2x4 as long as your ceiling height, transfer the wall location to the ceiling, joists, or cross-bracing. These marks help you position the wall before you plumb it. Make sure there is adequate framing in the ceiling to which you can nail the top plate.



### 2 Cut and mark the plates

Using your floor layout as a guide, mark and cut 2x4s for the top and bottom plates (usually the same length). Place them on edge beside each other and lay out the stud locations. The first stud should be at the end of the wall. Position the center of the next stud 16" from the end of the wall. Place remaining studs 16" on center (OC) so the distance from the center of one stud to center of the next equals 16". With a combination or speed square, draw lines  $\frac{3}{4}$ " on each side of your stud centers. Draw an X between the marks to show where to nail the studs.



If your new wall runs parallel to the ceiling joists, cut blocking from 2x material to fit tightly between the ceiling joists, and install them about every 2'. Measure and cut your blocking to length.

- **TIME:** About 2 hours to build a simple 10' wall, longer if you need to build it in place or in an awkward location
- **SKILLS:** Measuring, cutting, fastening with nails
- **TOOLS:** Tape measure, chalk line, pencil, framing square, saw, combination or speed square, level, hammer





## 4 Assemble the wall

Working on a flat surface, lay the studs on edge between the top and bottom plates. It helps to have something solid, such as a wall, to butt the framing against while you assemble and nail the wall. (Otherwise the assembly will creep across the floor.) Use pressure-treated 2x4s wherever they contact potentially moist surfaces such as concrete floors or walls.



## 5 Raise the frame

Framework can be cumbersome, so have a helper on hand. Position the bottom plate about where it needs to go and tip the wall into position. If the wall fits so tightly against the ceiling that you have to hammer it into place, protect the framing with a scrap of 2x4 as you pound. Tap both ends of the frame until it is roughly plumb in both directions.



## 6 Snug the frame with shims

If the wall is short in places, drive shims between the bottom plate and the floor or between the top plate and the ceiling joists. Shimming the top is best. Have your helper steady the framework while you drive the shims from both sides, thin edge to thin edge, to keep the plate from tilting.



## 7 Fasten frame to wall and floor

After the frame is snug, recheck that the wall is plumb in both directions. Check both ends of the wall and every other stud. Fasten the top plate to the ceiling by driving two 16d nails through the plate and into each joist or blocking. Fasten the bottom plate to the floor. For wood floors, use 16d nails; for concrete, use masonry nails or a powder-actuated hammer (see page 97).



## Building a wall in place

If building a wall on the floor and raising it into position is not practical in your situation, construct the new wall in place. The main complication to building in place is toenailing the studs top and bottom. You must take care to measure and cut the studs so they fit between the solidly nailed plates.

Typically walls are built with 2×4 framing lumber. But existing or new plumbing may require more space than provided in a standard wall. Instead use 2×6 framing lumber to build a wall that will contain large plumbing such as waste pipes or vent pipes. When wall

plates are spaced around pipes or mechanical fixtures, join the framing members with metal straps.

Before covering any new wall with drywall, ask your municipal or county building inspector to check your rough-in work. The inspector makes sure that plumbing and wiring are properly installed to code, so have pipes and wiring work in place and exposed for review. Few remodeling tasks are more time-consuming, expensive, and frustrating than removing drywall so the building inspector can check your rough-in work.

- **TIME:** About 4 to 5 hours, depending on the size of the wall
- **SKILLS:** Measuring and leveling; drilling and driving screws; shimming
- **TOOLS:** Tape measure, level, framing square, chalkline, plumb line, hammer

### QUIETER WALLS

To insulate against sound, build a wall with 2×6 top and bottom plates and staggered 2×4 studs. Purchase fiberglass insulation in batts or rolls and weave it between the studs along the length of the wall. Fill to the full height of the studs. The insulation establishes a barrier that reduces din and provides a quiet sanctuary. Add insulation board (Homasote is one brand) under the drywall for an additional noise barrier. Soundproof drywall, though expensive, provides the greatest sound control for home theaters and studios. See more details on [page 14](#).



#### 1 Install top and bottom plates

Cut the top and bottom plates and mark them for stud locations (see [page 92](#)). Transfer the marks to the faces of the plates, making sure the marks are clear so you can see them easily to align the studs while toenailing.

If the ceiling is unfinished, finding the joists is easy. For a finished ceiling, use a stud finder to locate the first joist. Mark both edges of the joist. The rest of the joists should be on 16" centers, so you can measure to locate them. Double-check the

locations with the stud finder. Nail the top plate to the joists as shown. Use a level and a straight board or a plumb line to mark the location of the bottom plate, or use a chalk line case as a plumb bob.

Mark the floor in two places beneath the ends of the top plate and make an X to indicate on which side of the mark to position the plate. Use masonry nails or a powder-actuated hammer ([page 97](#)) to fasten the bottom plate to the concrete floor.

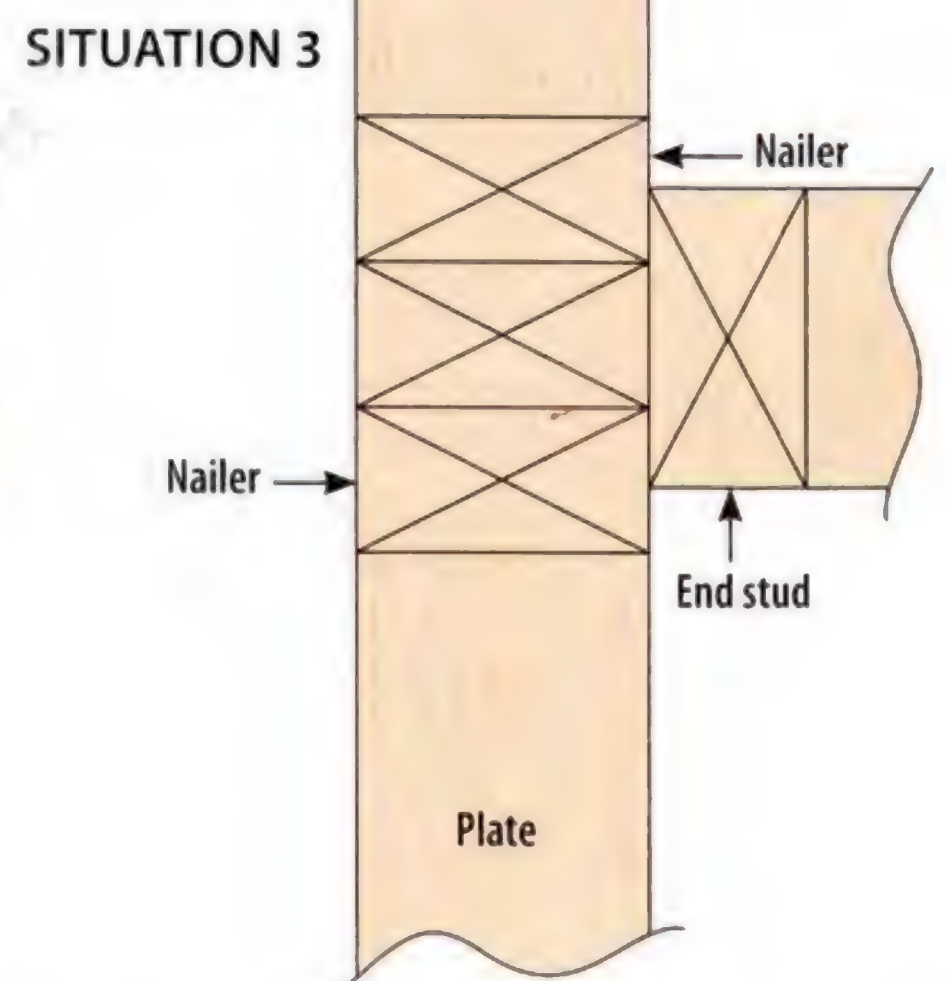
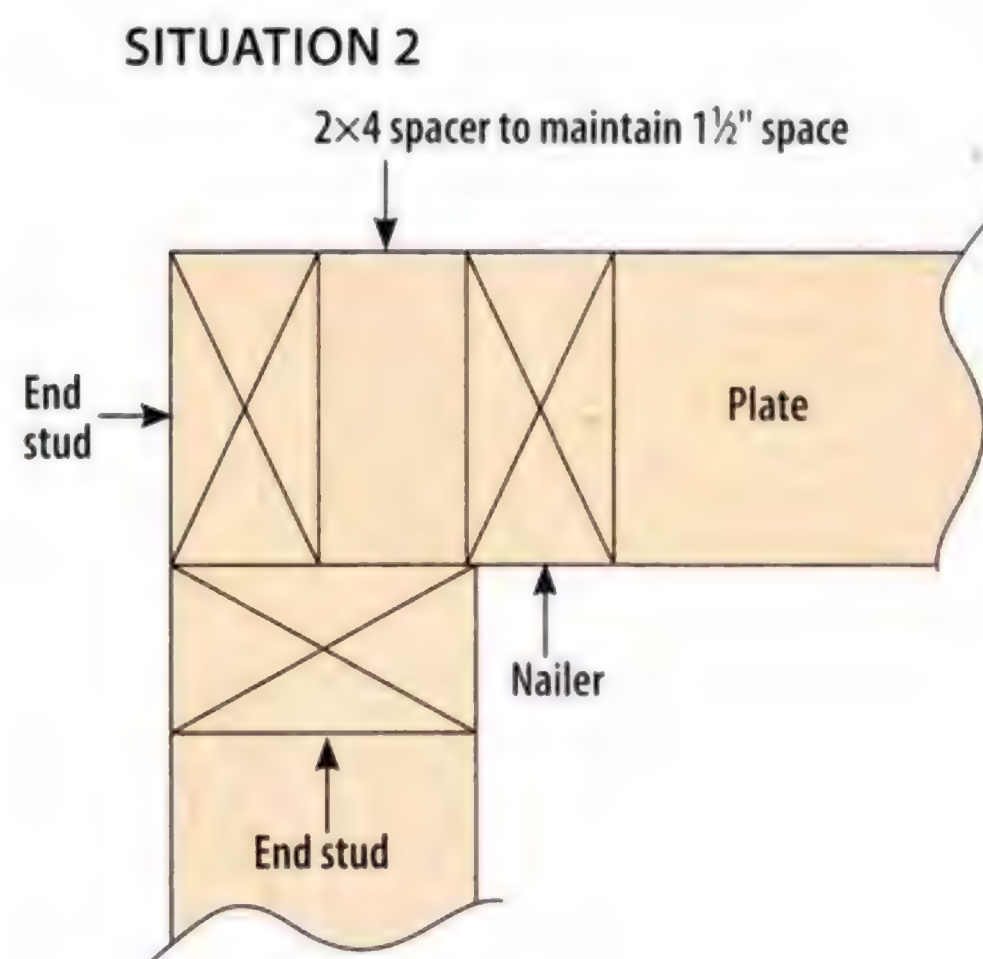
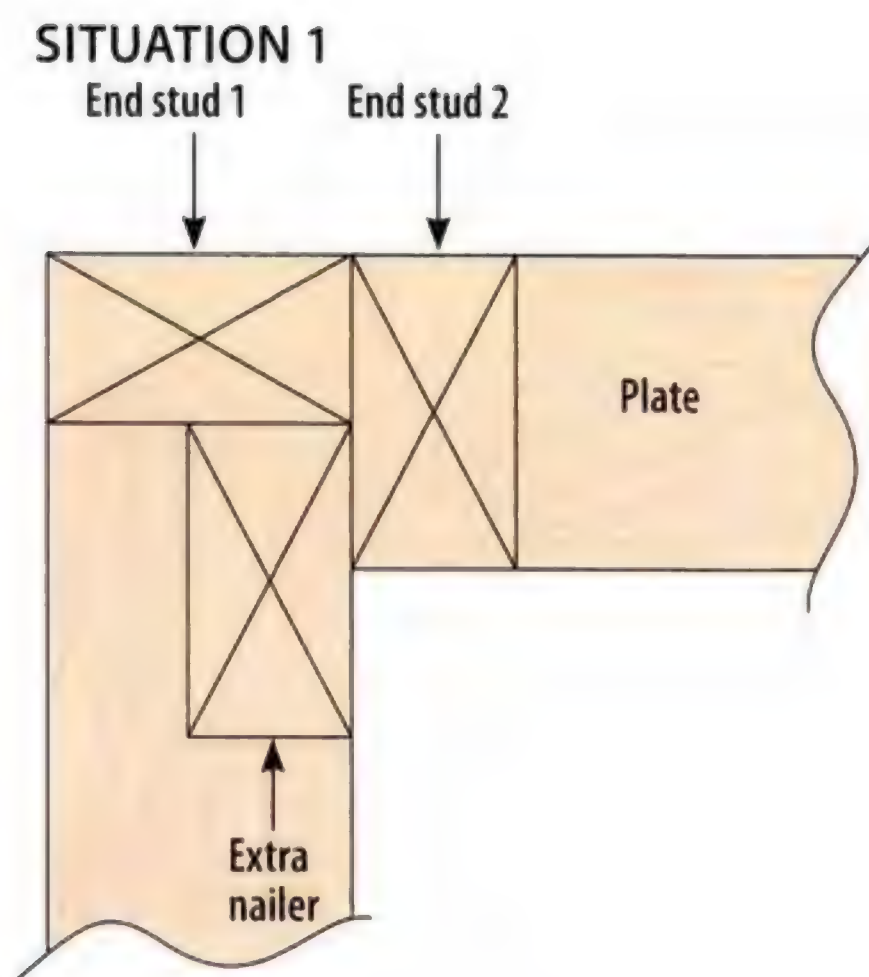




With top and bottom plates installed, measure between the plates for each individual stud. Add  $\frac{1}{16}$ " for a snug fit and cut. Tap each stud into place. If you really have to whack it to get it into place, don't risk splitting the stud; take it down and trim it a little. To secure the stud, drive 8d nails at an angle through the side of studs and into the plate as shown; this is called toenailing. Tap the nail once or twice while holding it parallel to the floor or ceiling. When the nail tip bites into the wood, change the angle to 45 degrees.

Drive four to six nails into each joint, two on each side, with an optional nail at the front and back. The first nail may move the stud, but the second nail, driven from the other side, will move it back into position.

If you have difficulty toenailing, drill pilot holes for the nails using a  $\frac{3}{32}$ " bit. Or place a  $1\frac{1}{2}$ " board between studs to serve as a temporary nailing brace. Push the stud against the brace and nail one side. Then remove the brace and nail the other side.



## 4 Frame at corners

When framing corners, make sure there is a nailing surface for every piece of drywall or paneling that will be installed. This means adding nonstructural nailers.

In **Situation 1**, an extra stud is turned sideways to offer a nailing surface and strengthen the corner. Drive 16d nails first through end stud 1 and into the extra nailer, then through end stud 2 and into the extra nailer and end stud 1.

In **Situation 2**, several foot-long 2x4 scraps (usually three in a standard 8' wall) serve as spacers between two full-length studs placed at the end of one wall. Tie the wall sections together with 16d nails.

**Situation 3** shows two intersecting walls. Nail three studs together and to the plates, then attach the lamination to the adjoining wall.



## Furring basement walls

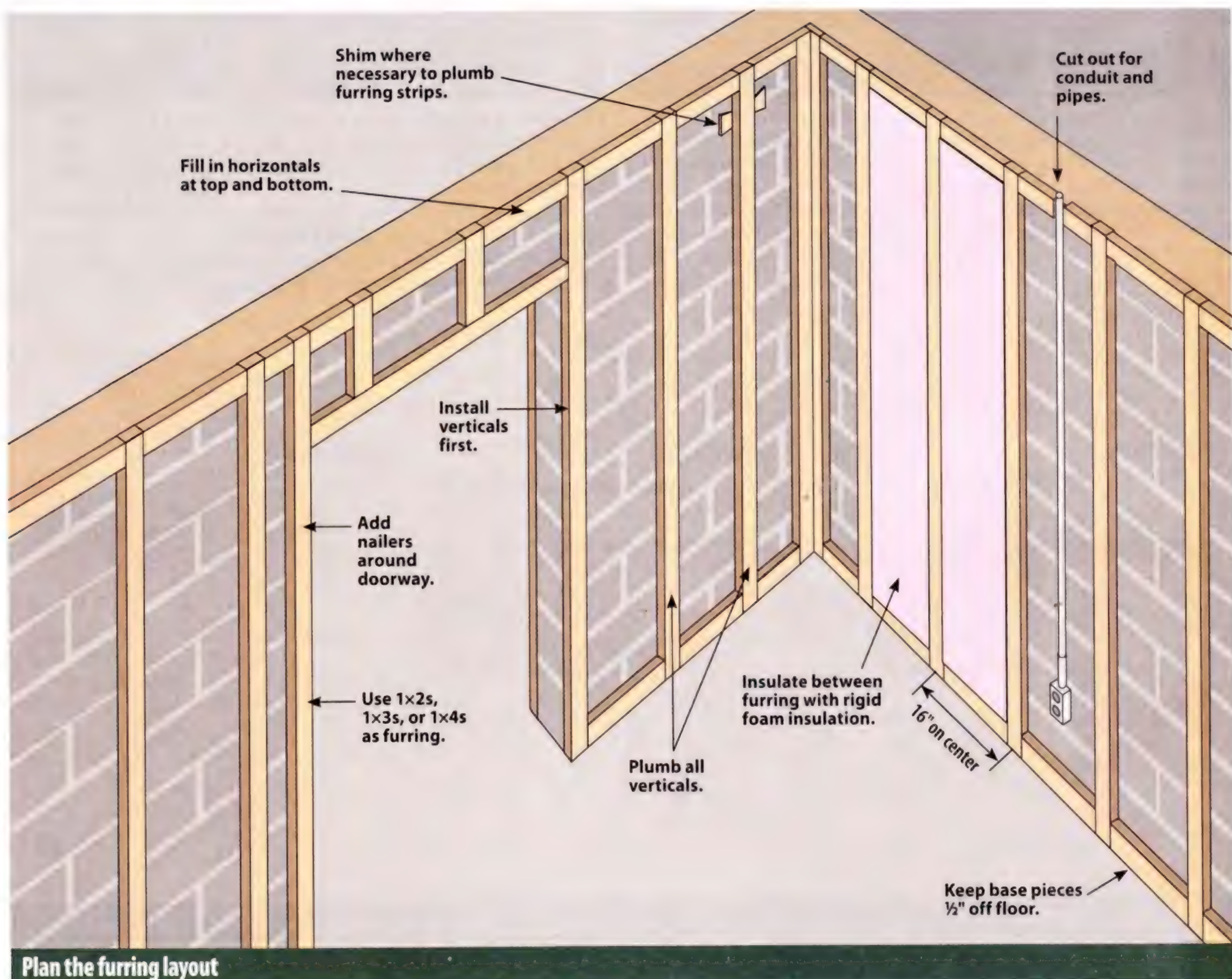
- **TIME:** 1 day for a 12×12' room
- **SKILLS:** Laying out, measuring, cutting, hammering
- **TOOLS:** Hammer, baby sledge, caulking gun, circular saw, tape measure, level, chalk line

**W**hen finishing basement walls, you can build stud walls (see pages 92–95) and fasten them to the concrete or masonry walls. A stud wall goes up quickly, gives you room to add plenty of insulation, and ensures that the new walls will be straight, even if the existing walls are not. However, you lose some floor space because of the thickness of the walls.

If your basement walls are smooth and straight, you can save money in materials and preserve some square footage by fastening 1×2, 1×3, or 1×4 furring strips to the walls. The layout is the

same as it is for stud walls. The ends of drywall or paneling sheets and all joints must fall on furring strips, and there must be nailing surfaces at all corners.

The construction for furred walls, however, is different from traditional construction. Attach individual furring strips to the wall (shimmed where necessary) with glue and masonry nails or with a powder-actuated hammer. (See **Tools to Use**, next page.) Rigid foam-insulation panels press easily into cavities; no need for adhesive or staples.



### Plan the furring layout

Begin the job by marking the locations of the vertical furring strips. One easy way to do this (you'll need a helper) is to position a sheet of your wall material in the corner of the room, plumb it, and strike a chalk line down its outside edge to mark the centerline for one strip. Using this line as a guide and 16" as the

center-to-center measurement, mark the locations of the other vertical strips along that wall.

Measure and cut each strip to fit between the floor and ceiling. Cut each piece 1/2" short so that it will be fastened a bit above the floor as a safeguard against moisture.





## 1 Apply adhesive

With a caulking gun, squeeze a wavy ¼"-wide bead of construction adhesive onto the furring strip. As you finish, release the pressure on the adhesive tube, which discontinues the flow. Push the strip against the wall in its correct location, pressing firmly to help spread the adhesive.



## 2 Set adhesive

Pull the strip off the wall and lean it against another wall to let the adhesive begin to set up. After letting it set for the time specified by the manufacturer, press the strip back into place.



## 3 Plumb and shim

Check the strip for plumb. If a dip or bulge is noticeable, tuck pairs of shims behind the strip and wedge it into line. Double-check your work as the job progresses by holding a straightedge horizontally across four or five vertical pieces. Correct any gaps or bulges.



## 4 Drive in fasteners

Hammer concrete nails through the strip and the shims and into the masonry wall. On a brick or block wall, it often is easiest to drive the nails into the mortar joints. Use a baby sledge if you have one. Hand-driving nails into concrete walls is extremely difficult; consider a powder-actuated hammer.



## 5 Add the horizontals

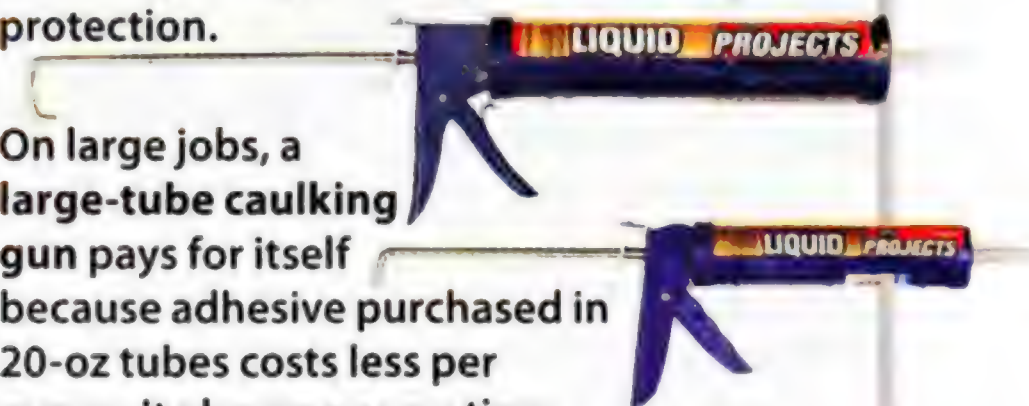
After all the verticals are in place, aligned, and secured, begin work on the top and bottom horizontal pieces. Measure and cut them one at a time. Apply adhesive, shim if necessary, and install them as you installed the verticals.

### TOOLS TO USE

A powder-actuated hammer (sometimes referred to as a Hilti or Ramset tool, two well-known manufacturers) makes basement remodeling easier. It drives nails using the force of a gunpowder charge. It's usually better to rent a better-quality tool than to buy a cheap one. Experiment with several types of loads to find one powerful enough to drive the nails but not so powerful as to drive them completely through the furring strips. **Note:** Follow the manufacturer's directions carefully. A powder-actuated hammer is closely related to a firearm and is dangerous if misused. Always wear eye and hearing protection.



On large jobs, a large-tube caulking gun pays for itself because adhesive purchased in 20-oz tubes costs less per ounce. It also saves you time and creates less mess because big tubes contain more than twice as much as the familiar 10-oz tubes.



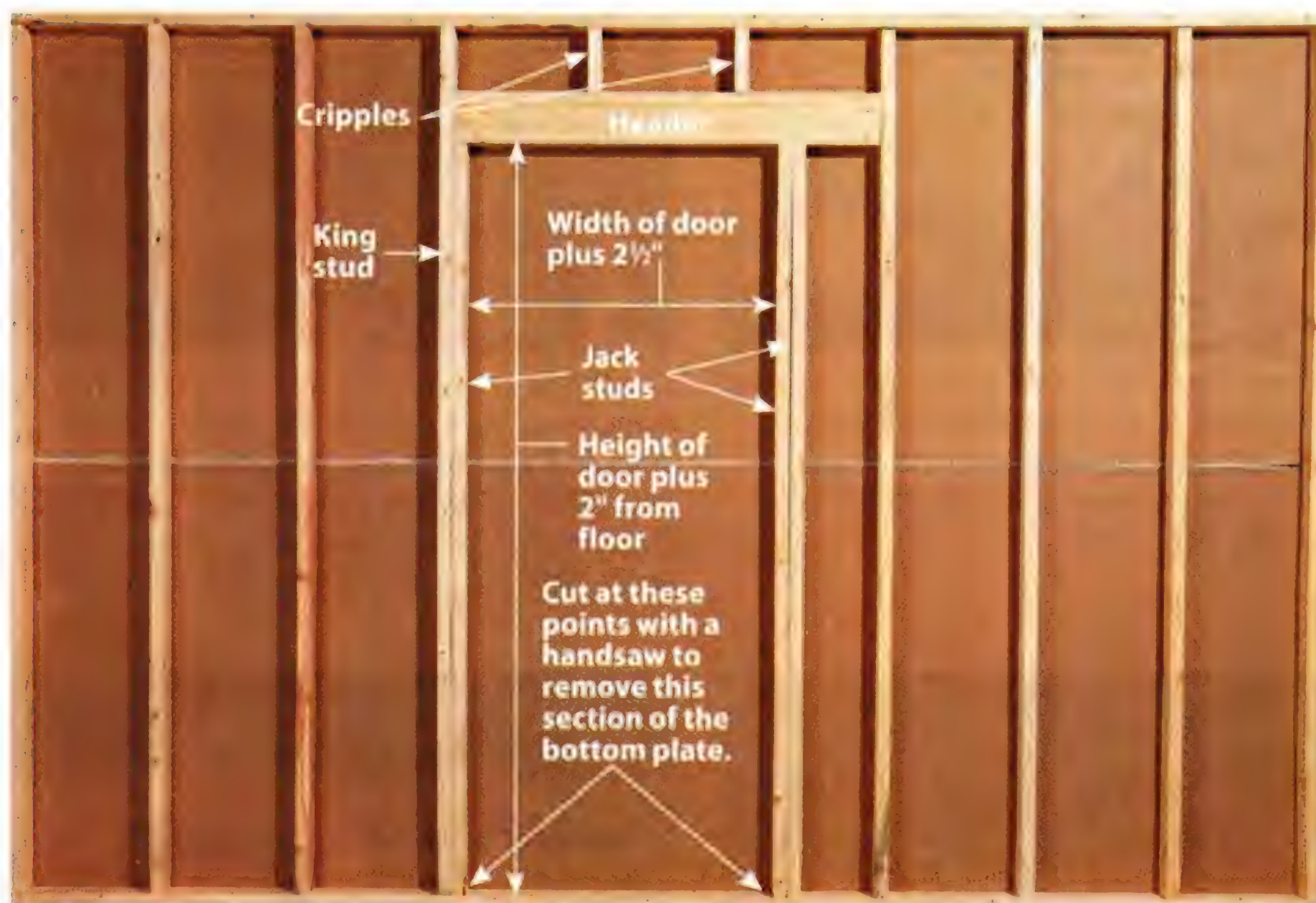


## Roughing-in openings and framing around protrusions

If you plan to install a door in your wall, determine the rough opening dimensions you need. For a prehung door, measure the outside dimensions of the jamb, and add  $\frac{1}{2}$ " for shimming. With a slab door (one that is not prehung), measure the width of the door, add  $2\frac{1}{2}$ " for the side jambs and shims,

and add 2" to the height for the head jamb, shims, and flooring. Standard door widths are 24", 26", 28", 30", 32", and 36". Doors are usually 80" tall.

Once you know the opening size, build the wall as described on pages 92–95, with the addition of the framing members shown below. Each has a function.

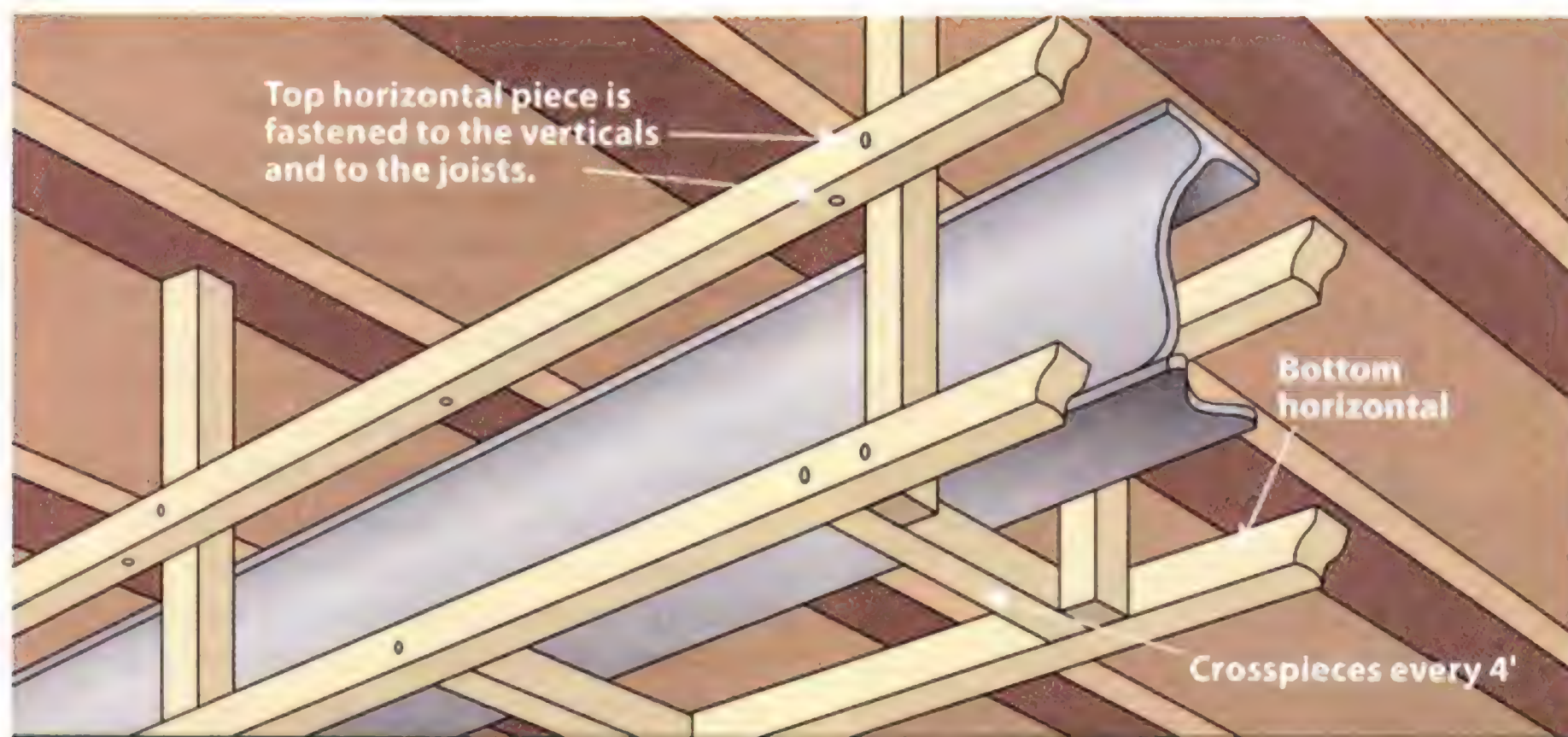


Jack studs are the vertical 2x4s on each side of the door opening. They are attached to a king stud or another jack stud. This doubling of studs provides solid, unbending support for the door.

The header is assembled from two 2x6s with a  $\frac{1}{2}$ " plywood spacer sandwiched in between. (The plywood is needed to make the header  $3\frac{1}{2}$ " thick, the same thickness as the wall framing.) The header rests on top of the jack studs and spans the top of the opening, supporting overhead loads. For openings that are less than 3' wide, you can use 2x4s instead of 2x6s.

Cripples are the short 2x4s added between the header and the top plate. They maintain a 16" on-center stud spacing for nailing drywall and help distribute the weight equally.

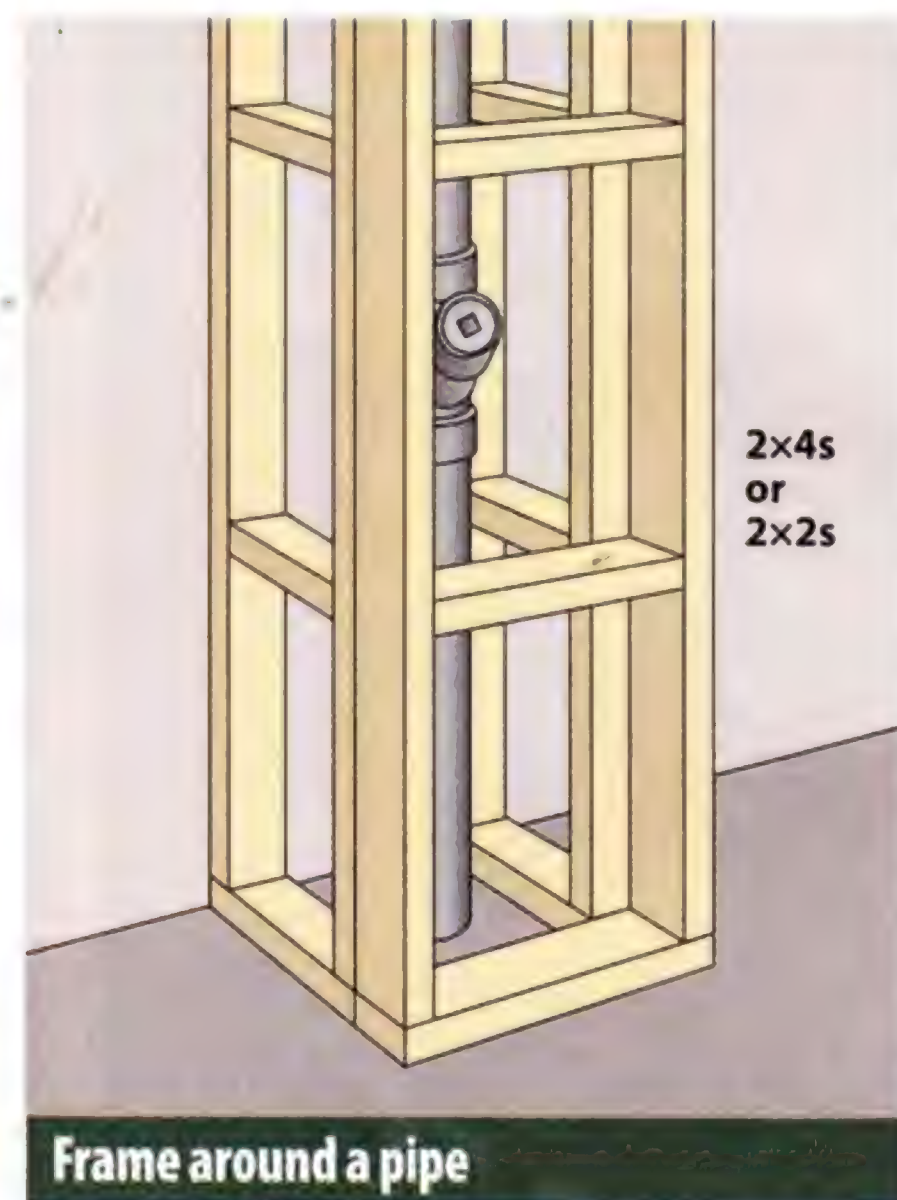
A window opening is like a door opening. You install a sill at the bottom of the window and add cripples between it and the wall's bottom plate.



### Frame around an I-beam

Use 2x2s to frame around a narrow obstruction such as a beam. Fasten the frame together with screws rather than nails because the structure is wobbly as you work. Drill pilot holes whenever you drive screws near the ends of boards. Make chalk lines on the joists  $1\frac{3}{8}$ " out from either side of the beam. On every other joist, attach a vertical 2x2, cutting

it to extend  $1\frac{3}{4}$ " below the bottom of the beam. Next, fasten horizontal pieces to the bottom ends of the verticals, then fasten horizontal pieces at the top, driving screws into the vertical supports and the joists. Finish the framing by installing horizontal crosspieces about every 4' between the bottom horizontal members.



### Frame around a pipe

You can cover a soil stack or other tall, narrow obstruction with a frame. Mark lines on the floor and measure for top and bottom plates as you would for a regular wall. Draw plumb lines on the wall to use as guides. Build three narrow walls of 2x4s or 2x2s; raise them into position; and fasten them to the floor, ceiling, wall, and each other. For easy access to the drain cleanout, attach a plywood or drywall panel with screws.





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## Laying out and cutting drywall

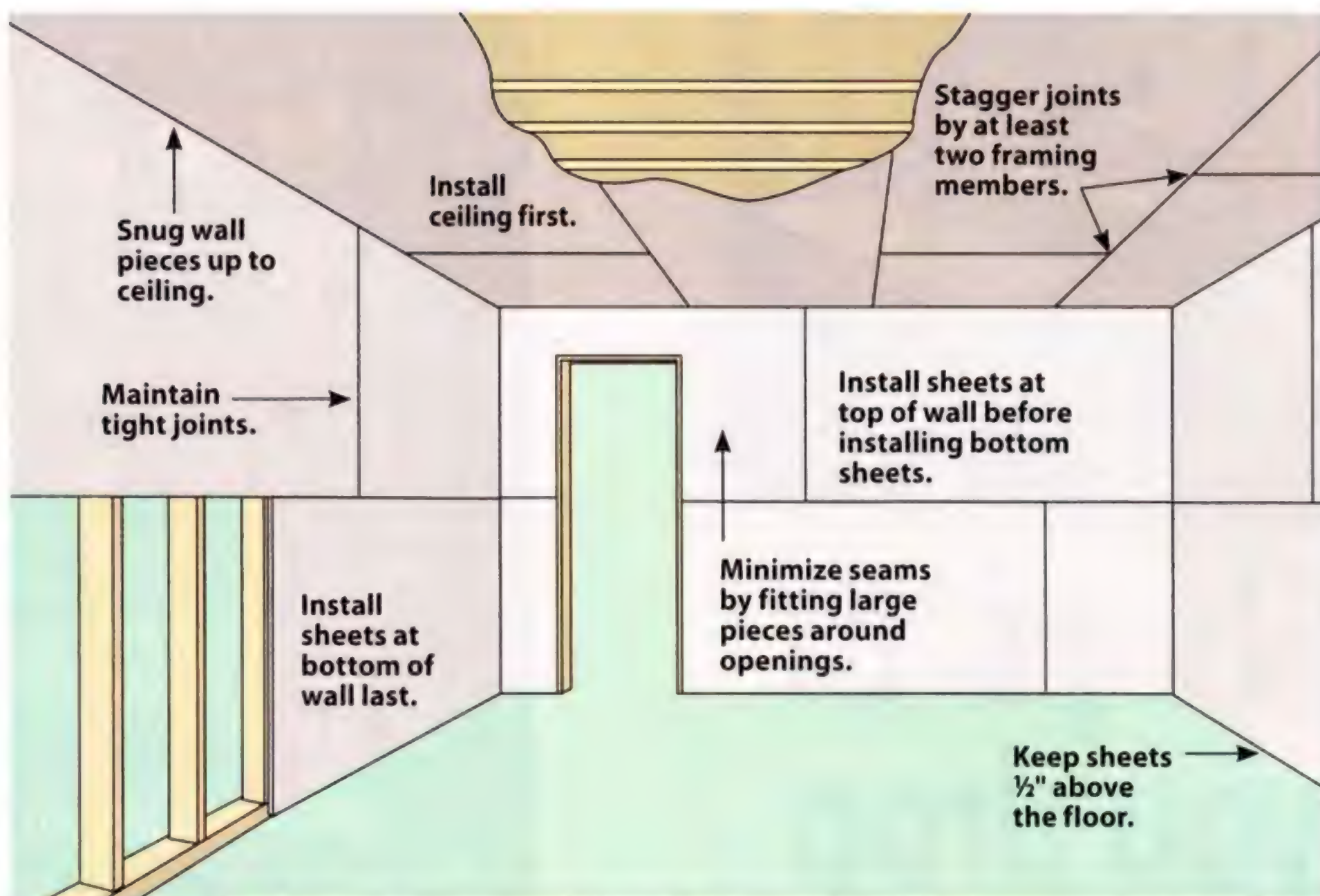
**D**rywall is inexpensive, and any homeowner has the skills needed to hang and finish it. But hanging drywall is tiring work. The sheets are heavy and unwieldy. Making cutouts for electrical boxes and pipes can be tedious. Careful installation makes finishing easier.

Finishing drywall to a smooth surface requires three applications of joint compound and sanding for professional installers—perhaps more for amateurs. Some homeowners prefer to have a professional install and finish drywall.

Check framing to make sure you have adequate nailing surfaces (see *page 102*). Add framing members where you need them. If you cover an existing wall, locate the joists and studs and clearly mark their locations on the walls and ceiling.

A helper is essential—hanging drywall alone is nearly impossible.

- **TIME:** With a helper, 1 day for a 12×12' room
- **SKILLS:** Measuring, physical strength, thoroughness
- **TOOLS:** Tape measure, drywall square, utility knife, drywall saw, chalk line



### Lay out the job

If your remodeling plan includes drywall on the ceiling and walls, install ceiling sheets first. Then lay out and install the top row of drywall on the walls. To protect against moisture deterioration of drywall, the bottom row should not contact the floor.

### DRYWALL SQUARE

Don't hesitate to spend the money for a drywall square (see **Photo 1**; about \$11). It quickly pays for itself in time and labor savings. For crosscuts, you simply make one measurement, set the square in place, and run your knife along the square's blade for a square cut. A drywall square also simplifies rip cuts.



**1 Make a crosscut**

Mark your cutline, stand the sheet on edge, and set your drywall square in place. Clasp the square firmly on top and brace it at its base with your foot. With the edge of the utility knife blade against the square, cut downward most of the way, then finish by cutting up from the bottom.



**2 Snap to cut**

Snap the segment back away from your cutline. Finally slice through the backing paper with your utility knife.





### 3 Measure for the last piece

To determine the correct cutoff length of a corner sheet, measure the distance from the last sheet to the corner at both the top and the bottom. If the corner is more than  $\frac{1}{4}$ " out of square, mark both ends of the cut rather than make a square cut using a drywall square.



### 4 Make a rip cut ...



### ...or a freehand cut

If you need to make a rip cut—one that is parallel to the long edge of the sheet—use your drywall square. Set the square on the edge of the sheet and hold the knife against it at the measured distance. Slide the square along with the knife, cutting as you go. Often a rip cut is not parallel to an edge; it tapers. In this case, make a mark at each end of the drywall sheet and chalk a line between the marks. Cut freehand or use a straightedge as a guide if you need a more precise edge.



### 5 Make a cutout

To make a cutout for an electrical box, measure from the box edges to the edge of the last panel. Measure from the top and bottom of the box to the bottom of the sheet of drywall above it or the ceiling. Transfer the measurements to the sheet and draw a rectangle. Score the surface with a utility knife, then cut it with a drywall saw or oscillating multi-tool. (See **Tools to Use**, page 103.)



### 6 Cut around pipes

To cut a hole for a pipe stub, measure and mark the sheet for the center of the pipe. Drill a hole using a holesaw bit that is slightly larger than the pipe diameter. Or, draw a circle and cut it out with a drywall saw or a utility knife.

## AVOID MOISTURE DAMAGE IN A BASEMENT

Wood framing can withstand occasional wetness as long as it is allowed to dry out, but drywall that gets wet once loses its strength and crumbles.

When you drywall a basement or another place that is subject to chronic dampness or occasional flooding, add nailers to the base of the framing and cut the drywall sheets so they are held off the floor 2–3". When you install the baseboard molding, add furring to fill the gap.

If your basement is subject to more drastic flooding, raise the drywall even higher. To do this, install a 1×6 baseboard directly onto the framing and set the drywall on top of it. This keeps the drywall 5½" above the floor.



## Hanging drywall

**B**e prepared for strenuous labor when you hang drywall. The sheets are heavy, you often have to work in awkward positions, and you have to hold the sheets in place while you drive screws. It's tempting to rush the job, but sloppy installation makes finishing more difficult. Wide gaps between drywall sheets take a long time to tape, and nobody wants nails popping out later. Here's how to do the job correctly the first time.

- **TIME:** 20 minutes per sheet for walls, 30 minutes per ceiling sheet
- **SKILLS:** A strong back, fastening in difficult circumstances
- **TOOLS:** Tape measure, good ladders or scaffolding, drill with drywall-type screwdriver attachment, drywall taping blades

**Ceiling pattern:**  
Screws only



**Wall patterns:**  
Screws only



**Screws and adhesive**



### Use screws according to code

Local building codes specify how many screws to use to hang drywall and in what sort of pattern. Codes vary not only from region to region, but also from room to room; for example, more fasteners may be required in bathrooms. Check with your building department.

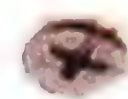
To avoid damage to the edge of the panel (making taping and texturing more difficult), drive screws at least  $\frac{3}{8}$ " from the ends or edges of drywall.

Using adhesive (Liquid Nails Drywall Construction Adhesive is one brand) and screws offers several advantages: a bond stronger than conventional nails or screws, a reduction of the chance of loose panels caused by improper fastening, and the ability to bridge minor framing irregularities. When using adhesive and screws, drive screws at 24" intervals (one fastener mid-width of board on each frame member) and one screw every 7" along the edge.

**WRONG:**  
Screwhead protrudes.



**CORRECT:**  
Screwhead set in dimple.



**WRONG:**  
Paper broken.



### Attach drywall with screws

The screw head must be set below the surface, but it must not break the paper. This is difficult to do with a simple screwdriver bit. Use a dimpler bit or a drywall screwdriver (see **Tools to Use** on the next page). Always drive in screws perpendicular to the sheet, or their heads will tear the paper.

### Set screws correctly

If you simply drive a screw flush with the drywall surface, you will not cover it with joint compound. If you drive the screw too deeply, you will break the paper on the drywall and the screw won't hold—it tears right through the gypsum inner core. Drive the screw so the head sets into a slightly dimpled surface (recommended  $\frac{1}{32}$ " depth). No portion of the screwhead

should protrude above the surface of the drywall. To test if your screws are driven deeply enough, run a taping blade along the surface of the wall. You should not feel any screwheads click against the blade as you pull it across. Remove any screws that miss joists or studs; swat the hole with your hammer to dimple it. Then drive another drywall screw nearby.





### Install the ceiling sheets

Hang  $\frac{5}{8}$ "-thick drywall on the ceiling before installing the wall sheets. Most pros prefer to start in a corner and work out from there, keeping the panels perpendicular to the joists. Before you start, take time to locate joists and mark their locations on the sheet and the wall.

To make hanging drywall easier, construct one or two T-braces to use as props, *above*, or rent a drywall hoist. (See

inset.) Either solution makes the process easier and results in a neater job (minimize waves in the ceiling drywall).

The quickest but most difficult way to install drywall on a ceiling is to set the panel in place and support it with your head, leaving your hands free to hold and drive screws. Wearing a baseball cap greatly minimizes pulled hair and a sore head.



### TOOLS TO USE

For free information about oscillating multi-tools (above; great for cutting drywall openings for electrical boxes) see [woodmagazine.com/multitools](http://woodmagazine.com/multitools).

A drywall screwdriver (see photo *previous page*) has an adjustable bit that, once set correctly, will drive a screw to the correct depth, then stop. A less expensive but just as good option is a dimpler bit that you can attach to any electric drill.

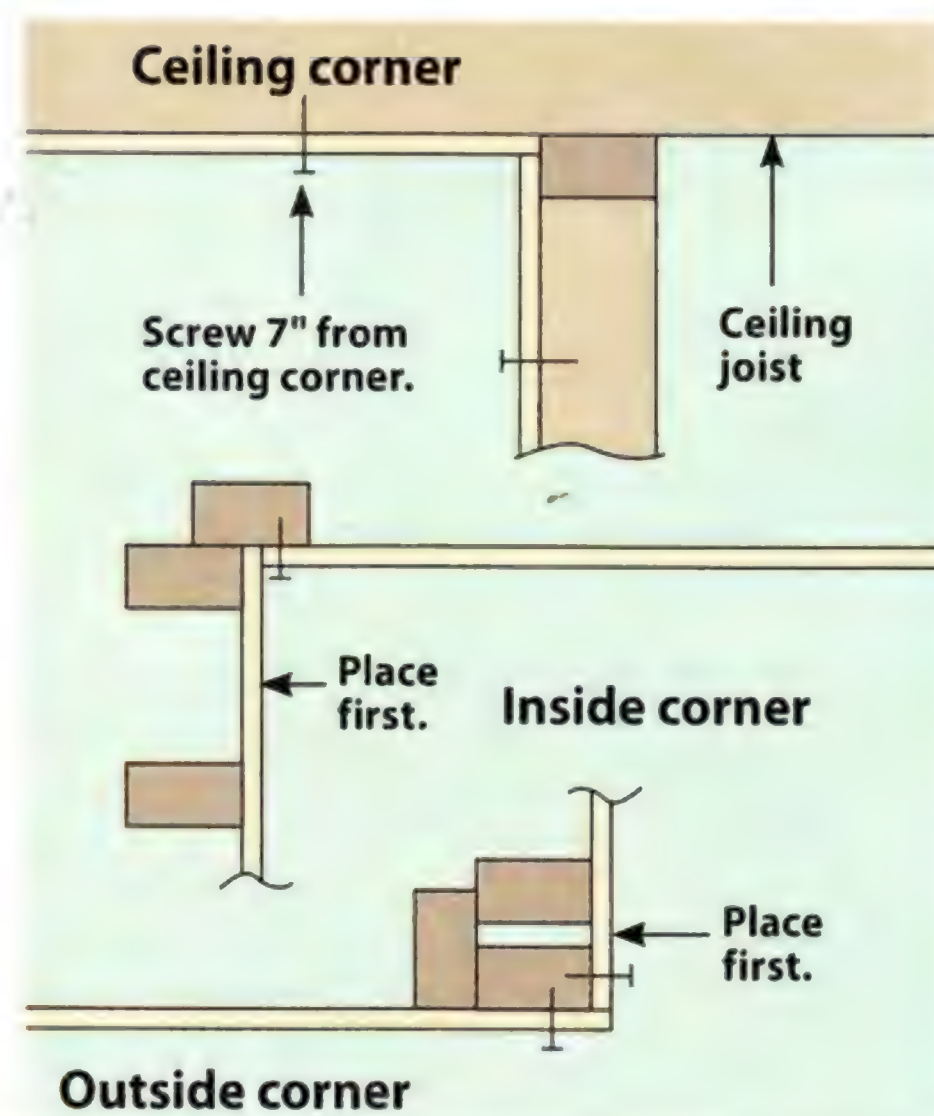


### Install the wall sheets

Once the ceiling panels are secured, hang  $\frac{1}{2}$ "-thick drywall sheets on the walls. If you are installing sheets horizontally, as shown *above*, begin with the upper sheets, butting them firmly against the ceiling drywall. Make sure all your vertical seams hit studs. Butt the lower panels firmly

against the upper panels, tapered edge to tapered edge. Raise drywall sheets tightly with a wedge or lever.

If you are installing sheets vertically, check that the tapered edges fall midway across a stud. If they don't, either cut the drywall or attach pieces




of lumber to the stud to give yourself a nailing surface for the next piece.

Overlap pieces at corners, as shown *above*. Finish the job by adding the filler pieces, measuring and cutting each one to size. Make sure each piece has at least two nailing members to support it.



## Taping drywall

Just three coats of drywall compound with sanding result in smooth walls for a professional drywaller. But as a beginner, don't be surprised if it takes you four or five coats. Unless you have large holes that require patching plaster, use ready-mixed drywall joint compound. Dry-mix compounds provide more strength and don't shrink, but you need to work fast. To hide imperfections, apply texture to your walls with a rented texture gun and hopper. 

- **TIME:** For a typical bedroom, 5 hours for the first coat and 2 hours for subsequent coats, plus time for sanding and drying
- **SKILLS:** Patience and willingness to learn
- **TOOLS:** Utility knife; 6", 10", and 12" taping blades; corner taping tool; pole sander or hand sander; tin snips

### DRYWALL FINISHING TIPS

Rusty, gunked-up tools ruin your work. Scrape, wash, and dry blades after every use.

Apply self-sticking mesh tape onto drywall wherever a tapered edge meets a tapered edge, as shown *below right*. Use

paper tape everywhere else. The mesh tape requires less joint compound but does not work as well for inside corners.

When sanding, control the fine dust by using a fan to pull it out a window. Seal doorways and wear a breathing mask.



### 1 Apply a bed coat

Conceal screwheads by applying drywall compound to a 6" taping blade and passing over the spot twice. Make sure you leave compound only in the depression and not on the rest of the sheet. Do this with each coat until the dimple is filled in completely. Joints require more attention, especially butt joints. If you are using self-sticking mesh tape, simply cut pieces to fit,

press them into place, and begin applying joint compound. For paper tape, start by spreading a bed coat over the joint, as shown *above*, with a 6" taping blade. Apply just enough compound to adhere the paper tape. A screw dimple is shown at *top left*. The photo at *top right* shows drywall edges making a butt joint.





## 2 Embed the tape in compound

(Skip this step if you are using mesh tape.) Immediately after applying the bed coat to a joint, center a length of paper tape over the joint and press the tape firmly against the filled joint by running your tapping blade along it. If the tape begins to slide, hold it in place with your hand. If bubbles form under the tape, if there are places where the tape is not sticking to the bed coat, or if wrinkles appear, peel the tape back and apply more compound. Then press the tape into place.



## 3 Apply compound over the tape

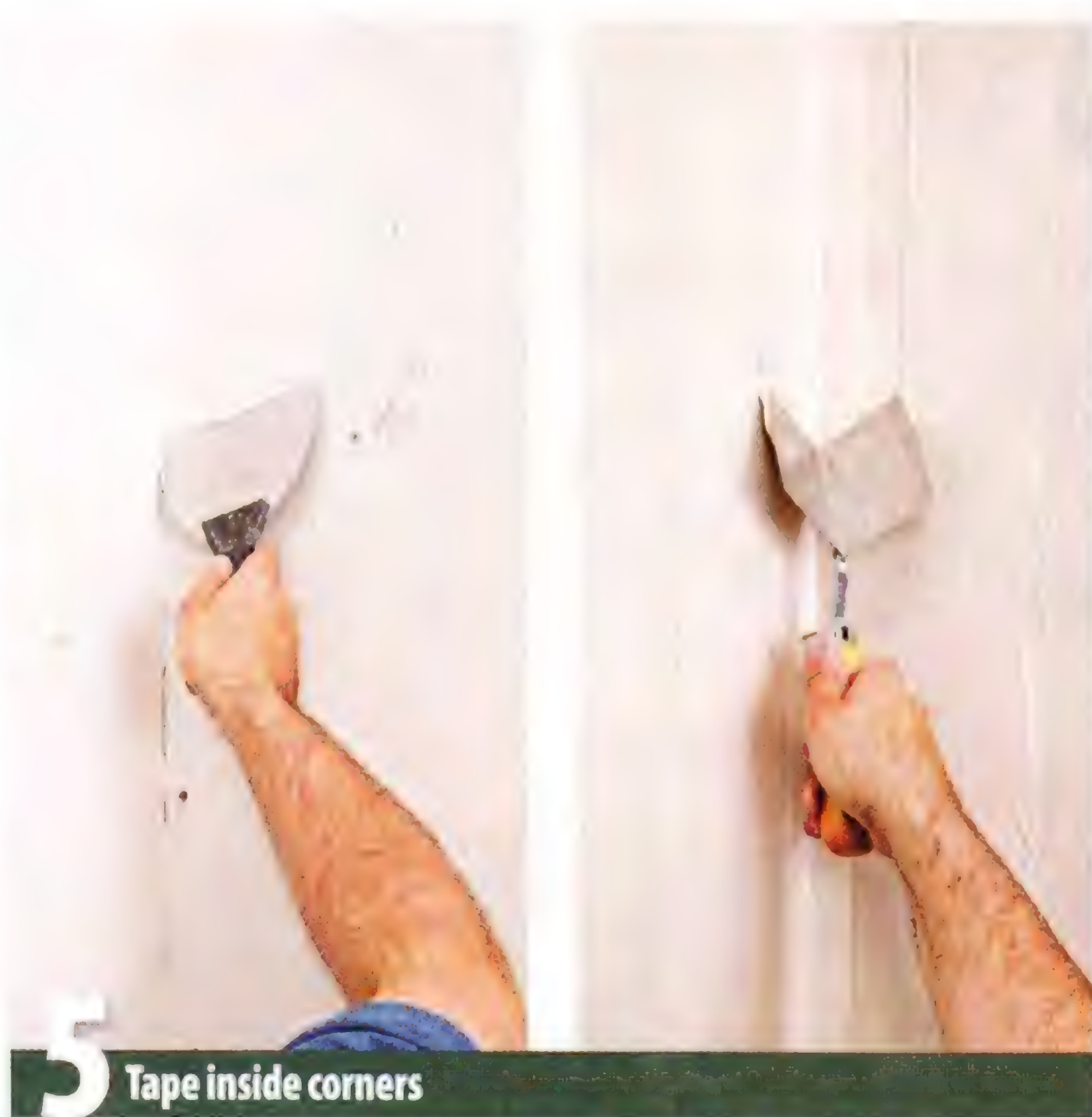
Load a 10" tapping blade with compound and apply a smooth coat over the tape. Where two tapered edges meet, make sure the blade extends past both tapers. Fill in the tapers only so you have a flat wall surface. For butt joints, feather out the compound 7" to 9" on each side; a small ridge in the middle can be sanded later. After the compound dries, scrape off ridges and bumps with a drywall knife held perpendicular to the wall and then sand. Apply and sand successive coats until the surface is smooth.



## 4 Coat outside corners

To protect and conceal drywall edges that meet at an outside corner, cut a piece of metal or plastic corner bead using tin snips. Fit the strip over the corner and fasten it to the wall, one side at a time. Drive nails or screws at 10" intervals. Make sure the flange of the corner bead does not protrude above what will be the finished surface by running a tapping blade along the length of the corner bead. Fasten down any areas of flange that protrude.

Apply a first coat of joint compound with a 6" blade angled away from the corner. Allow one side of the blade to ride on the bead, the other side on the wall. For subsequent coats, use 10" and 12" blades.



## 5 Tape inside corners

Apply a bed coat of compound to both sides of an inside corner with a 6" blade. Cut a piece of paper tape to the correct length, fold it, and position it by hand. Keep it straight to avoid wrinkles. Run a corner tapping tool along its length to embed the tape in the compound. Lift and reapply compound wherever the tape has wrinkles, bubbles, or nonadhering spots.

Once the tape is embedded, apply some compound to the walls and some to the corner tool. Stroke on a smooth coat. This will take several passes and some practice. You may find it easier to feather out the edges with a 10" tapping blade.



# Warm up your floor

Basement retreats should be warmer than caves.  
The solution may be under your feet.

**T**he idea of converting an underutilized basement, naturally cool in the summer, into living space is as old as houses with unfinished basements. A dehumidifier holds dampness and mildew at bay. But keeping your basement comfortable during winter months presents additional challenges. Home-heating systems usually lack the capacity to include basement comfort.

Even if your furnace has extra capacity, you can pump a lot of heat into a basement and not warm the most important surface: the concrete. A cold floor means cold feet, and cold feet make the whole room seem uncomfortable. Fortunately, you've got two good solutions. One is a passive strategy and the other an active system.

## THE PASSIVE SOLUTION

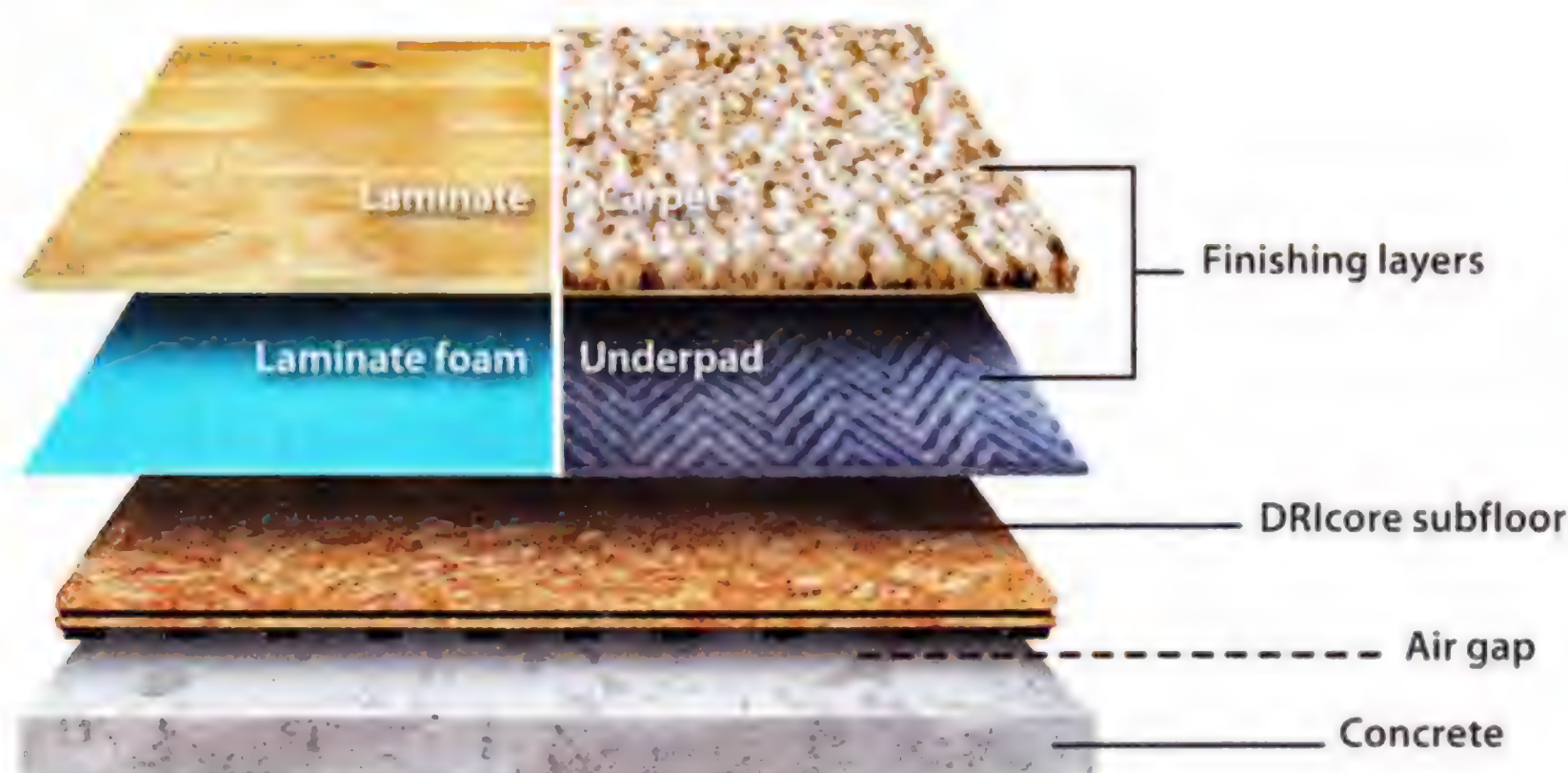
If the air temperature in your basement hovers in the mid-70° F range, you probably just need to put something between your feet and the concrete floor. Tile, either vinyl composition or ceramic, applied directly to the concrete slab will be just as cold as the slab beneath it.

Carpet with a pad provides good insulation, but because concrete can wick the subslab moisture, carpet (or carpet and pad) installed directly on a basement slab can get musty.

To put some distance between your feet and the 'crete, install a floating subfloor that provides an air gap and vapor barrier between the concrete floor and the subfloor. Building such a subfloor piecemeal would be difficult and costly, but there's DRIcore, a modular one-step engineered subfloor solution designed specifically for basements. Many home centers stock DRIcore subflooring in 24×24" squares, which retail for about \$6 apiece (about \$225 for a 10×15' room.) (See **Resources** on page 109 for details.)

All concrete continually releases moisture. To combat moisture, the waffle pattern on the underside of each ¾"-thick DRIcore panel, *above*, raises the panel off the floor, creating an air gap. The gap encourages constant air circulation and evaporation of surface moisture from the concrete floor. The raised moisture barrier also insulates and cushions your finished floor.

### PASSIVE SYSTEM



The DRIcore subfloor system makes it easy to transform a bare slab into a finished floor.



The "waffle" pattern vapor barrier separates the subfloor from the concrete slab. You can apply your choice of several finished floors to the OSB panel. Or for a utility floor, just paint or varnish it.



The tongue-and-groove panels assemble easily with just a mallet and wood block.





With no-glue 24×24" panels, you can cover a lot of basement in short order.

You can cover a floor in far less time than you might think. The tongue-and-groove modular panels press-fit together quickly and easily, each one providing 23¼×23¼" of usable surface. There is no edge fastening or adhesive required. The panels for a typical 500-sq.-ft. basement install in an afternoon. Then top it off with your finished floor: carpet, laminate, engineered hardwood, or vinyl.

DRICore panels are load-rated up to 4,000 lbs. per square foot. That means you can plan a fantastic recreation room for the kids, home gym, game room, or home media room. (Note: DRICore wouldn't be a garage solution because of the weight of an automobile.)

### Some things to know before you start

**Installation of stud walls.** In a completely unfinished basement, install the DRICore panels before erecting stud walls. Then frame the walls on top of the panels. Leave at least ¼" of air space between the panel edges and the foun-

dation walls for expansion and air circulation. Where framing already exists, leave ¼" of space between the panels and the walls.

**Floor drains.** Maintain access to functioning floor drains and clean-outs with an easy-to-lift access opening through the finished floor. Check with your local plumbing code authority for recommendations before beginning.

**Concrete floor preparation.** Sweep, vacuum, and remove any debris, dirt, bumps, or ridges on the concrete surface that may prevent the panels from lying flat. Any dips or low spots in the concrete surface greater than ¼" should be leveled using a self-leveling underlayment compound.

### Finished-floor options and special requirements

**Carpet.** To prevent panel uplift when stretching carpet, fasten the perimeter panels to the concrete floor with flat-head concrete screws every 4 feet, and drive one screw through the panel in

the center of the room. Then install perimeter tack strips on top of the panels and install the pad and carpet. Never glue anything directly to the panels.

**Laminate flooring.** Simply install the floor manufacturer's laminate foam underpad and laminate flooring on top of the panels. Use a continuous vapor barrier on top of the panels if you like, but don't seal it to the perimeter wall.

**Engineered hardwood.** Only install engineered wood flooring approved for use below grade. For nail-down floors, fasten ¾" plywood underlayment to the DRICore panels, then secure the flooring using 1½" barbed flooring nails.

**Vinyl sheets and vinyl tiles.** Install ¼" plywood underlayment approved for sheet vinyl using ⅝" fasteners that do not penetrate the moisture barrier on the underside of the panels. (The manufacturer does not recommend using lauan plywood.) Glue the vinyl floor to the underlayment according to the vinyl manufacturer's installation instructions.

**Ceramic tile.** Although it is possible to install ceramic tile on a floating subfloor like this, the process involves extensive leveling and shimming of the subfloor panels and fastening each panel with at least five flathead concrete screws. After consulting the manufacturer's recommended procedures, you may want to think twice about this option.

### TOOLBOX

- Pencil
- Tape measure
- Level
- Framing square
- Portable circular saw or jigsaw (general-purpose blades)
- Rubber mallet or hammer
- Wood tapping block (scrap 2x4)
- Pry bar



## THE ACTIVE SYSTEM

If your basement feels chilly and needs a warm boost, electric underfloor radiant heating provides a cost-effective way to bring the temperature into the comfort range.

Electric underfloor radiant-heating systems work much like heat from the sun. Heating elements warm the floor surface, which then emits energy in the form of infrared heat. It's like being outside on a sunny but cool spring day; although the air temperature feels cool, the sun's infrared rays keep you warm. In this case, though, the infrared energy radiates from the floor. Heat reaches objects and occupants first. These surfaces then warm the surrounding air with minimal floor-to-ceiling temperature variation. This means that the air temperature in the room can be lower than normal and still maintain an acceptable comfort level.

No energy is expended blowing air or pumping water, and no heat escapes in pipes or ducts. This completely invisible and unobtrusive heating system allows flexibility in creating the ideal man cave in a basement.

Keep in mind: Not all systems are UL listed for installation in "hazardous" or "wet" areas, as defined in the National Electrical Code ([necplus.com](http://necplus.com)).

## Sizing up the job

If your floor is smaller than 150 sq. ft., a single 110V system (about \$1,200, including thermostat) works great. Floors larger than 150 sq. ft. require a second 110V power source on a separate 15-amp circuit, or a 220V circuit.

Install electric radiant heating on top of any structurally sound plywood or solid concrete floor. We found one type of mat designed for use under ceramic or porcelain tile, marble, granite, or natural stone, *top right*. A second style, *next page*, works best for laminate flooring, floating wood, or engineered wood flooring. Many DIYers have the skills to install systems for floating floors; systems designed for tile or stone floors are best left to professional installers.

All systems minimize added floor thickness. The ultrathin (less than 1/8") heat mats also smooth out minor imperfections in the subfloor.

Preattached lead wires connect to one end of each heating mat for easy routing and connection to the thermostat.

Electric radiant heat mats must connect to a ground-fault circuit interrupter (GFCI); a built-in GFCI accompanies some thermostats.

## System features to look for

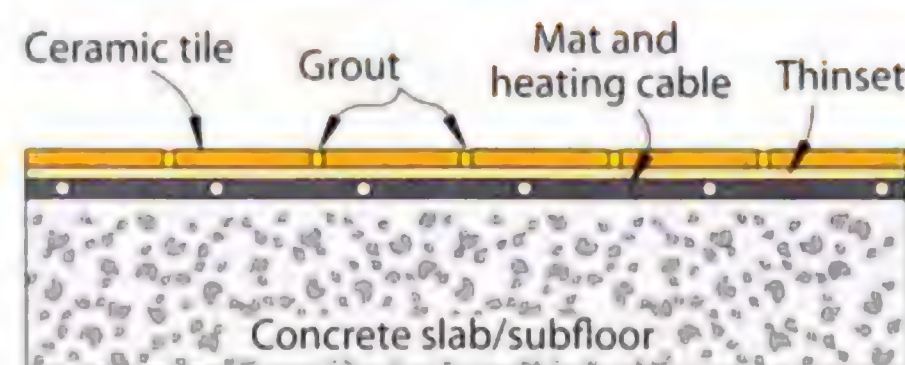
Radiant floor thermostats include either air-temperature and floor sensors or just floor sensors. Thermostats almost always include floor sensors, especially in supplemental heating applications, to directly control floor temperature separate from the air temperature. Even in sole-source heating applications, where a room (air) thermostat controls the floor temperature, it makes sense to have a floor sensor. This ensures compliance with some wood and laminate floor warranties that specify maximum underfloor heating temperatures. For ease of control, choose a programmable thermostat.

An underfloor system with a "zero EMF" (electromagnetic field) feature eliminates interference with telephones, radios, pacemakers, hearing aids, and televisions. Also, the heat mats should be constructed with self-limiting properties to eliminate accidental overheating.

## Typical basement installation

Although heat-mat installation steps vary by system, the process for all active systems remains similar. First, roll out the heating-element mats on the slab. Mats that do not incorporate underlayments may require separate ones. Then tape the mats together. For mats with separate underlayments, tape the underlayments together and then tape the mats to the underlayment. Take care to prevent damaging the heating elements during installation.

Hire an electrician to connect the heat-mat wires and floor-temperature sensor to the thermostat. For heat mats that don't include vapor barriers, lay one according to the heat-mat manufacturer's instructions. Install a new floating floor directly on top of the system. When finished, power up the heating system.



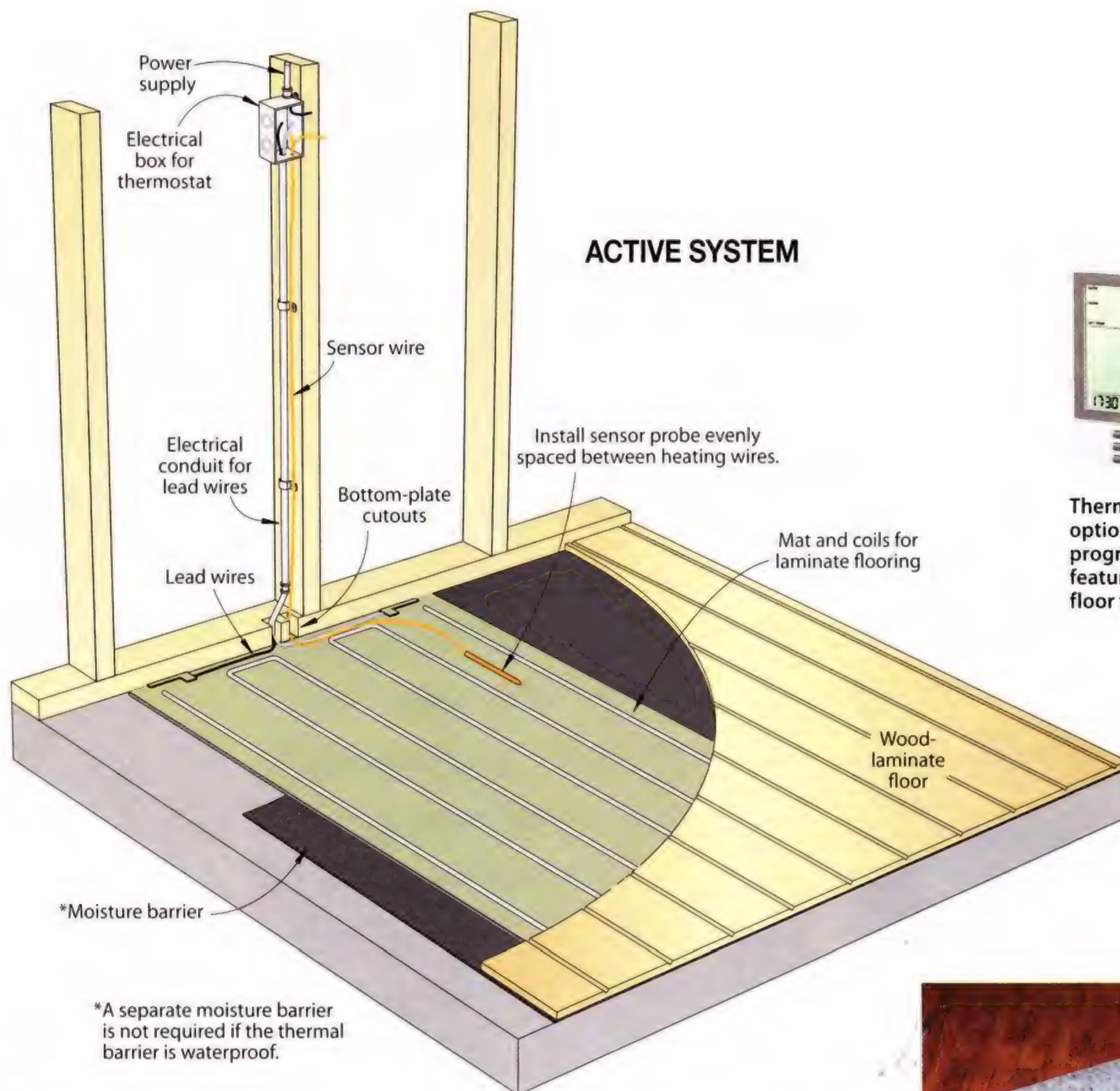
The ThermoTile mat, made with commercial-grade fiberglass mesh, holds the heating cable flat for easy installation. The mat and heating cable are embedded in thinset beneath ceramic or porcelain-tile floors.

## Operating the system

A wall-mounted room thermostat controls underfloor heating systems, just like other conventional heating systems. To ensure economical operation, consider the following points:

- After installation of the heat mats and the finished floor, bring the system up to temperature gradually in stages over several days until reaching the floor-temperature setting of the sensor.
- Each room with an underfloor heating system should have its own thermostat. This allows you to set room temperatures individually based on use. If the room gets little use, turn the thermostat down to conserve energy.
- Depending on the subfloor and the finished floor installed, there may be more or less heat-up and cool-down time. Anticipate these when switching the system on and off. Careful time-clock control of on/off periods ensures maximum comfort at minimum cost.
- Setting the thermostat to a high temperature won't warm the room quicker. It merely overheats the occupants after reaching the set temperature.
- The temperature of the floor surface can be varied to suit different usages and tastes. Manufacturers recommend a maximum floor temperature setting of 82° to 85°F.





Thermostat options, including programmable features, monitor floor temperature.


## Important considerations

Although electric underfloor heating systems are generally maintenance-free, take care to prevent damage to the system. Never pierce the floor. Piercing an electrically conductive element with a nail or screw can trip the GFCI and cut all power to the system. Inform all contractors working in the area of an installed underfloor heating system. Then request they read the information in the installation and operating manual before commencing work.

Never cover any heated part of the floor with solid-bottomed or permanent fixtures or furniture, thick rugs, dog beds, bean-bag chairs, exercise mats, or items with high thermal insulation. This traps heat and causes local overheating of the system.

If you plan to operate your electric heating system as a primary or sole heat source in your basement, make sure that the watts installed meet your Btu

ThermoFloor, a 3-in-1 electric underfloor radiant system, heats, insulates, and quiets the floor beneath laminate, engineered wood, hardwood and other floating floors.

requirements (1 watt = 3.412 Btus). To calculate heat requirements, consult a heating professional or the manufacturer for assistance. 

Written by **Jan Svec**

Illustrations: **Roxanne LeMoine**

## Resources

**Note:** Before purchasing an underfloor system, it's always best to measure your space and draw up a layout plan.

**DRIcore.** For detailed installation instructions and information on how to estimate the number of subfloor panels and other supplies you'll need, and to obtain a free installation-guide video on CD, contact DRIcore at 866-767-6374 or go to [dricore.com](http://dricore.com).

**ThermoSoft.** ThermoSoft supplies ThermoTile and ThermoFloor systems, radiant floor-heating thermostats, and accessories for any type of installation. 800-308-8057 or [thermosoft.com](http://thermosoft.com).





# Gallery of Ideas

## Display case hits a home run

An American League fan displays 21 autographed baseballs on a wall in a simple hinged-lid case shaped like home plate. (Similar new cases for 21 or 23 balls sell on eBay for about \$90.) "This sure beats trying to organize a stack of balls in individual plastic cases," he says.



## Batter up!

Instead of a clutter of ball bats standing in the corner, Jackson Hall had a woodworking friend build a simple rack to hold 15 autographed Louisville Sluggers—collected over 40 years—for his wall. The rack and prized bats take up just 26 $\frac{3}{8}$ ×70".



## Cooler plays spin the bottle

In Dennis Bardin's home bar (see page 42), a Vendo 23 machine (circa 1950) dispenses 8-ounce Coke bottles for a mere 6 cents. The top revolves to the next available bottle.



## Mirrored case has the backs of Twins greats

A Minnesota Twins fan displays his most-prized bobbleheads in an acrylic case with a mirrored back. He scooped up the case (9×16×4 $\frac{1}{2}$ ") for \$30 on Craig's List. The batting order from left: Tony Oliva, Harmon Killebrew, Kirby Puckett, and Kent Hrbek.





### Rockin' vinyl preserved

A rock fan displays three of his favorite albums (by artists Audioslave, Stevie Ray Vaughn, and Ozzie Osbourne) behind autographed guitars. The guitar hangers sell for about \$20 at professional music shops and on eBay.



### Marathon memories never fade

To remember his faster (and younger) days, a Boston Marathon finisher displays his favorite marathon medals in a 2x20x8" shadow box. "This beats tossing awards on a doorknob or hook," he says.



### 50s favorite preserved

A treasured Howdy Doody marionette emerged from his hiding place in the back of a baby boomer's closet and found a new home in a custom acrylic display case—well beyond the grasp of busy nephews. The 7x7x25" Howdy shrine hangs on the wall; a black-acrylic back surface helps Howdy jump off the wall.



### Wine cellar in a weekend

Leon Larson keeps his 8x7' basement wine cellar well stocked for backyard entertaining. (See page 74.) He spent about 8 hours assembling the 77½"-tall pine kits (wineracksamerica.com). "One person can put together the racks, but a second set of hands makes it go quicker," Leon says. "Then I spent another 5 or 6 hours attaching the racks to the walls with angle-iron brackets and Tapcon screws." For temperature control, Leon built a 2x6 wall against the foundation and packed it with insulation.



Butkus, Payton, Sayers, Grange—they all have a place of honor descending into Joe's Bear Cave. Just remove your spikes at the top of the stairs, please.



## Step this way, Bears fans

**W**hile descending into his Bear Cave, Joe Reisinger, right, treats visitors to a Monsters of the Midway history lesson: Joe has honored each Bears Hall of Famer and Super Bowl MVP with a step of his own. Besides gallons of official NFL colors (Home Depot purchases) and 12 rolls of blue painter's tape, Joe invested 100 hours into painting his Bears shrine. Here's the playbook on Joe's remarkable stairway.

After removing the carpeting from the stairs, Joe filled the nail and staple holes and sanded each step before applying a coat of gray primer. Then he rolled the treads and risers with two coats of blue floor paint. Next, he measured and masked the stripes of the stairway before laying down two coats of white paint. After the second coat dried, Joe remasked each step and then put down two coats of orange paint on the center of the stairway.

Finally, the real artistry began. A FedEx store cut stencils for all names and numbers of Bears greats, HOF (Hall of Fame), and GSH (George S. Hallas, the Bears' legendary owner). Joe then brushed on the white and blue characters. Three coats of a clear poly-acrylic protect his handiwork.

**Photo note:** Lynn Valentine, Joe's neighbor, provided these photos with one painful stipulation: Joe must wear a Packers jersey when they gather to watch the two teams square off this fall. That could hurt! 🏈

Joe's 16x20' game room at the bottom of the stairs is packed—floor, walls, and ceiling—with Bears memorabilia.



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